COTTON

MAY, SERVING THE 1940

Textile Industries

The Tramp of Marching Feet Echoes in your Factory Aisles

HERE and now, it is a water-borne echo, but the pulsating beat is like an overtone to the orchestration of your machines.

An overtone of admonition to be ready for whatever change Time will bring, in economic melody and cadence.

Whether the tempo will quicken with intensity or slacken, the need to be ready persists—to be ready through the most thorough preparation of your facilities for production.

These facilities involve more than machines. They include many things, but chiefly plans, organization, buildings, equipment—perhaps new sources of raw materials.

This is a time to call in the Engineer to plan, to organize, to replace the obsolete and to construct for a closer control of production costs.

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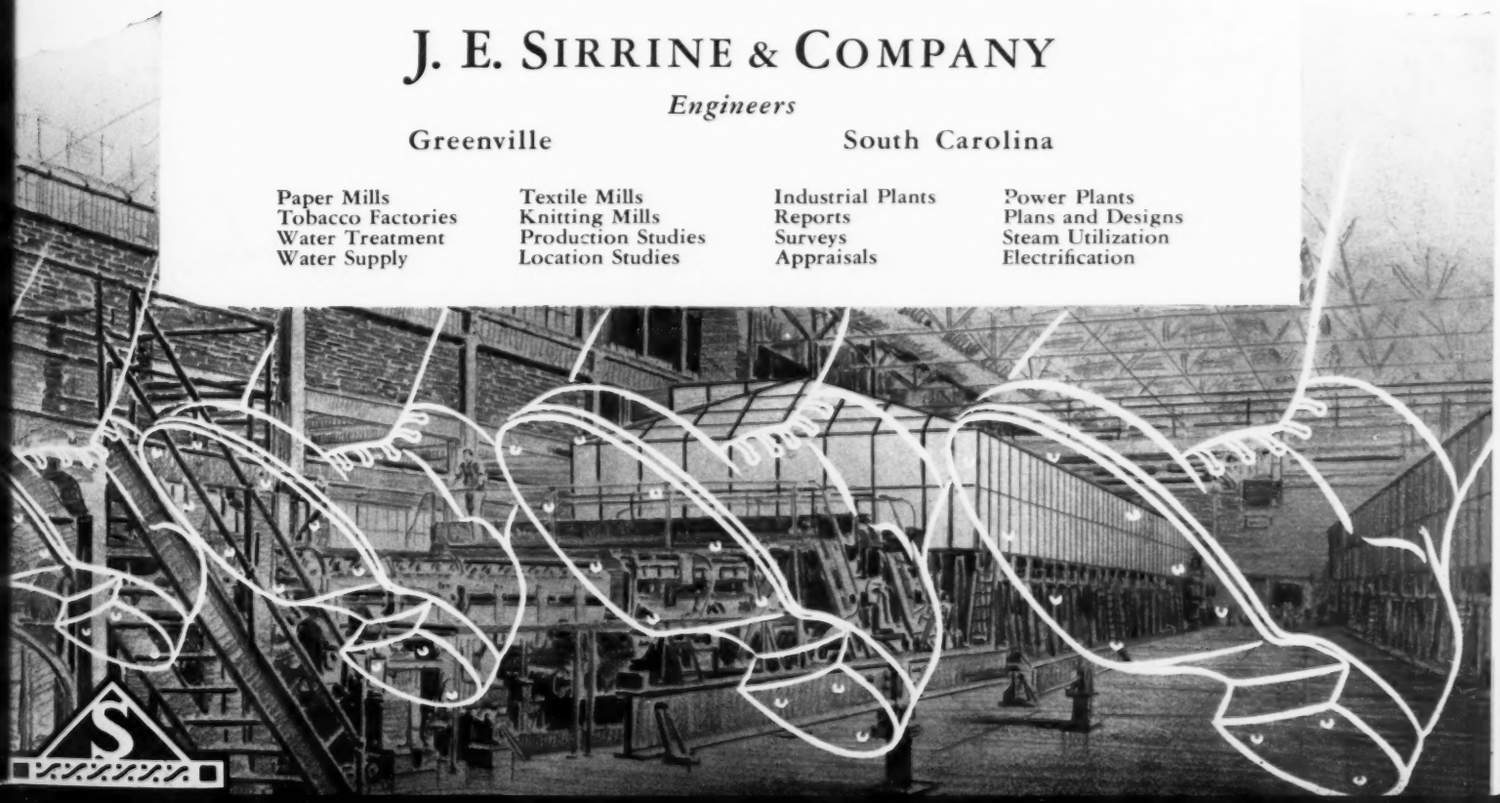
PERIODICAL DIVISION

J. E. SIRRINE & COMPANY

Engineers

Greenville South Carolina

Paper Mills	Textile Mills	Industrial Plants	Power Plants
Tobacco Factories	Knitting Mills	Reports	Plans and Designs
Water Treatment	Production Studies	Surveys	Steam Utilization
Water Supply	Location Studies	Appraisals	Electrification



Factoring

Points the Way

Cash As You Ship

Receive cash for shipments as made . . . yet extend your usual credit terms to customers.

No Credit Losses

Full credit risk and responsibility assumed by Commercial Factors Corporation.

No Collection Expense

Collection worry and expense and the cost of credit checking eliminated through our service.

Learn more about these and the other benefits of Commercial factoring by writing for this information.

COMMERCIAL FACTORS CORPORATION

Fred'k Vietor & Achelis, Inc. Established 1828
Schefer, Schramm & Vogel Established 1838
Peierls, Buhler & Co., Inc. Established 1893

TWO PARK AVENUE, NEW YORK

CFC

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Entered as second-class matter at the Post office, Dalton, Ga., under the Act of March 3, 1879.

L-67841 Take Up Pawl Bushing to replace L-121, to provide closer fit.

L-68183-4 Cloth Roll Rack for #62 Take-up, made to prevent lint collecting between rack and gear.

Intermediate Gear Pinion and Stud to be made of Special Steel.

L-68356-7 one piece pick shafts of metal for XL model looms.

Use L-67486 Kick Back Spring in place of L-52138. Made of new steel and has a loop on the outer end to provide smoother action and reduce breakage.

Crank Shaft Box Caps with Oil Wicks, to replace Lm-2257 for E models with 1 3/4" Crank Shaft.

L-68185 Clutch Pinion Gear Stud, arranged to provide better lubrication, to replace L-39065.

L-67582 Bunter to be used in place of L-42664, but of stronger construction.

By 6557 Transferrer Spring Collar of strengthened and simplified design, for regular construction and repairs on all models of looms, to replace By 1416.

Link Lever with Steel Stud, for E, K, and Mod. D Looms.

Change L-52189 RH Shipper Sleeve Arm by lengthening bolt slots to allow for more outward adjustment.

L-67745 Clutch Plate of new construction to make it easier to replace the plate or the cork on the loom.

L-67853 Take-up Stand, like L-26028 except recesses cut deeper to give clearances over the heads of Pick Shaft Box bolts and Shipper Lever Bracket Bolts.

L-68092 Anti-Friction Bearing Treadle Roll, for E, K, X and XK Model looms with cams on auxiliary shaft and regular treadles.

Friction Let-Off Band (can be used on Roper Let-off on E Model loom) to be lined with cork.

L-68144 Friction Pulley Follower, like L-38404 except thicker.

Making Loom Repair Parts As Draper Men Do It

A special Draper department is constantly at work making better loom parts. Sales and service men report problems that come up from day to day in any mill on new weaves or changing conditions. Improved parts, where needed, are not based on somebody's hunch or one mill's experience. They are worked out by research, good design and careful test to give longer life or better weaving. They go to all who buy repair parts from

Draper Corporation

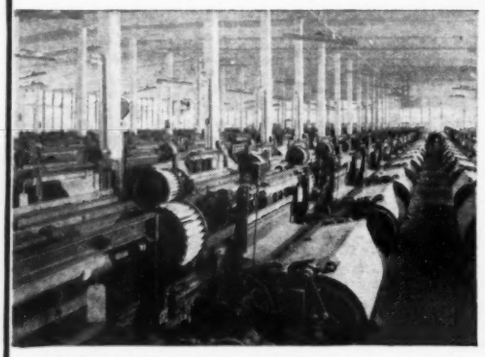
TEXACO STAZON

Texaco's important contribution to more effective loom lubrication. *Texaco Stazon* reduces spoilage by resisting dripping and spattering. *Texaco Stazon* stays on.

•

RESULTS LIKE THESE

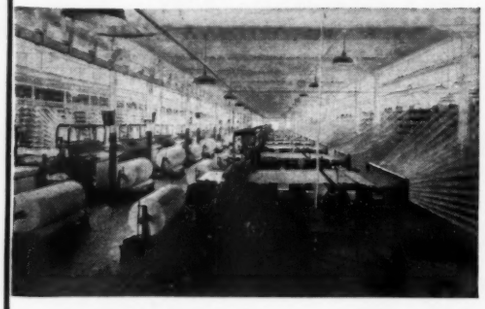
for YOUR Mill



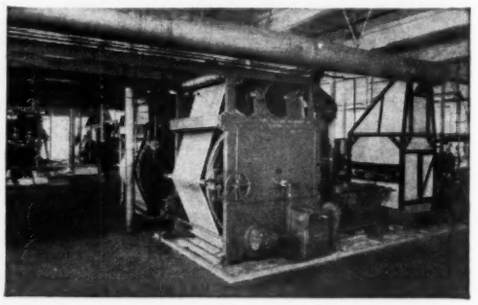
LYDIA COTTON MILLS report that the gratifying economies, better machine performance, low maintenance costs is why they are 100% TEXACO.

JANTZEN SWIM SUITS Spinning Department Manager says, "We have not found Texaco's equal, let alone anything better." So they're 100% TEXACO.

FIRESTONE-GASTONIA, producing tire fabrics find that because their bearings run much better every anti-friction bearing is 100% TEXACO.



UNION BLEACHERY have lubricated more and more equipment each year with Texaco and today all their Sanforizers are 100% TEXACO.



AMONG TEXTILE PEOPLE there is a steadily growing preference for *Texaco Textile Mill Lubricants.* The cases cited here are typical.

If you are not now using Texaco in your operations, it will pay you to do so. You'll find it worthwhile to inquire about this. A Texaco Lubrication Engineer will gladly aid your men in bringing about savings. Just phone the nearest of more than 2300 Texaco warehousing points, or write to:

The Texas Company, 135 East 42nd St., New York, N. Y.

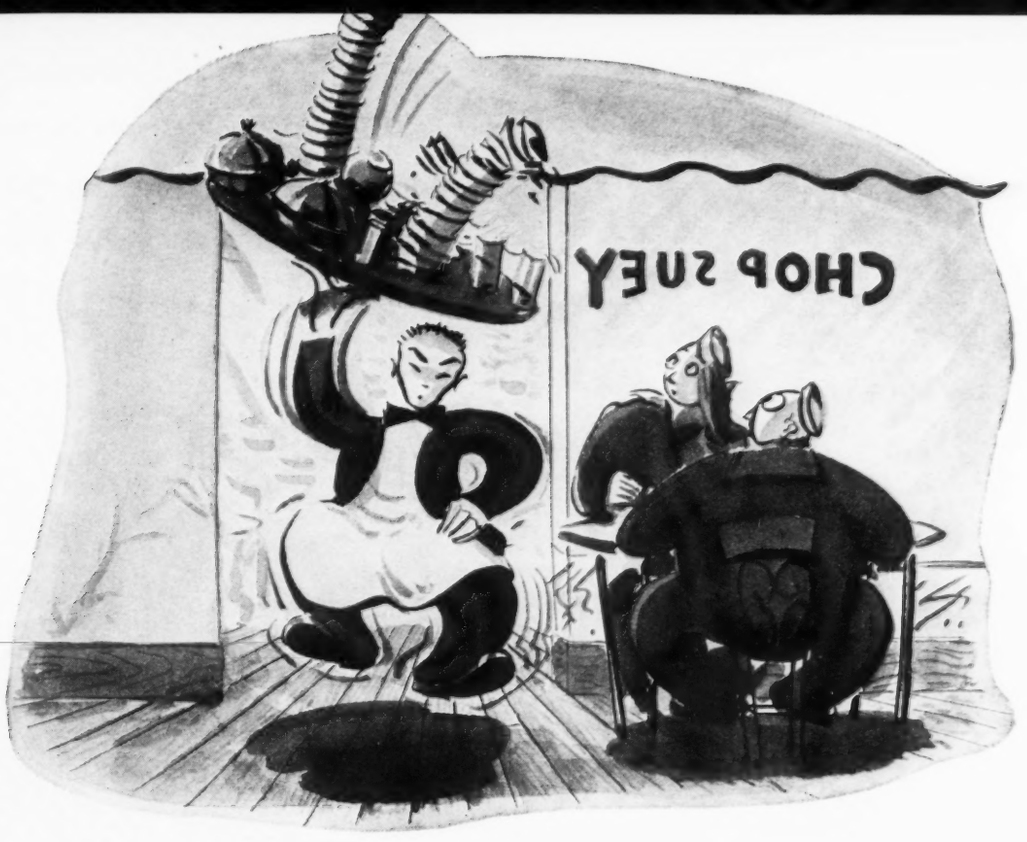
Texaco Dealers invite you to tune in The Texaco Star Theatre—a full hour of all-star entertainment — Every Wednesday Night — Columbia Network — 9:00 E.D.T., 8:00 E.S.T., 8:00 C.D.T., 7:00 C.S.T., 6:00 M.S.T., 5:00 P.S.T.

TEXACO

REG. T.M.

TEXACO

TEXTILE MILL LUBRICANTS



NO YELLOW PERIL *with* WARNER CAUSTIC SODA

You know how expensive it is to re-treat cotton that has come out yellow because it has picked up iron from an alkaline processing solution. That's why we hold the iron content of Warner Caustic Soda to as little as three parts to the million!

Warner has more than fifty years of technical and production experience in improving the quality of Caustic Soda. The net result is a Textile Grade electrolytic Caustic Soda that gives superior results yet commands no price premium.

Why not get quotations on a car of Warner Caustic Soda? You'll like its uniform quality and appreciate the convenience of prompt service from nearby Charleston, West Virginia.

OTHER WARNER CHEMICALS

Tetra Sodium Pyrophosphate	Liquid Caustic Potash	Carbon Bisulfide
Phosphoric Acid	Chlorine, Liquid	Sodium Sulfide
Sodium Phosphates	Carbon Tetrachloride	Epsom Salt
Bromine	Trichlorethylene	Hydrogen Peroxide

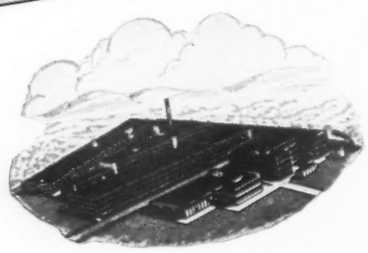
WARNER

CHEMICAL COMPANY ☆ DIVISION OF

WESTVACO CHLORINE PRODUCTS CORPORATION

CHRYSLER BUILDING, NEW YORK, N. Y.

A tip on CONE-DRIVE BELTS



LINCOLN MILLS
OF ALABAMA
ARMY, SINGLE AND DOUBLE FILLED DUCK
COTTON FABRICS UP TO 120" WIDE
Huntsville, Alabama

Feb. 10th, 1940

The Goodyear Tire & Rubber Company, Inc.
Birmingham, Ala.

Gentlemen:

About ten years ago we installed our first Goodyear "T" type cone belts on a few of our Saco-Lowell Slubbers and Intermediates and as a result of this initial trial order we have standardized on the Goodyear "T" type cone belt and have ordered same for replacement on the balance of our frames.

You will be interested to know that a recent check of the belts, now operating, revealed the fact that a large majority of the belts installed on the original trial are still operating today and appear to be in good condition for a further period of additional service.

During this entire period it has not been necessary for us to charge one cent for maintenance to the belts and we have not lost any time because of shutdowns to remove slack from the belts as there is no noticeable stretch in them. Our experience has been that the belt shifts with ease and there is no question but that it contributes materially to a greater uniformity and higher quality in the finished yarn. The proof of our belief is that our entire plant is now 100% equipped with these "T" type belts.

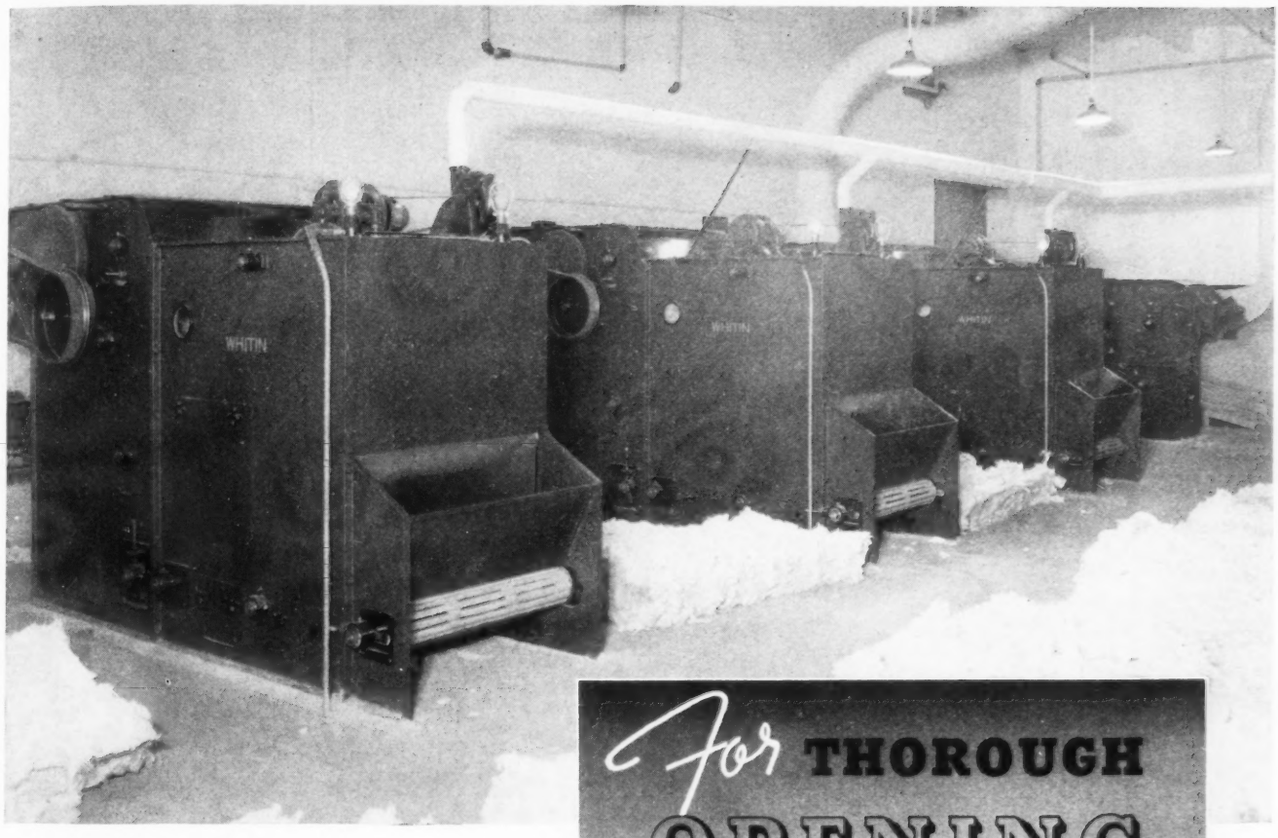
Very truly yours,
LINCOLN MILLS OF ALABAMA
Thos. A. Reese
General Superintendent.

PWP/B.

TO GET SERVICE LIKE THIS on your cone-drives, consult the G. T. M. — Goodyear Technical Man. Write Goodyear, Akron, Ohio, or Los Angeles, California — or phone the nearest Goodyear Mechanical Rubber Goods Distributor.

BELTS
MOLDED GOODS
HOSE
PACKING
Made by the makers of Goodyear Tires

THE GREATEST NAME IN RUBBER
GOODYEAR



For THOROUGH
OPENING
AND
BLENDING

THE **WHITIN** BLENDING FEEDER WILL GIVE YOU

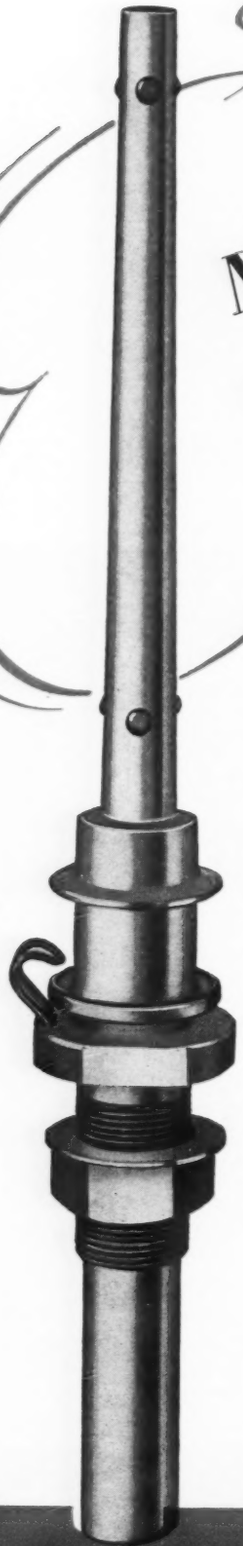
★ A Higher Percentage of Small Leaf, Dust, and Fly Removal

★ Better Blooming of the Stock

★ Cleaner Picker Laps

★ Stronger Yarns

WHITIN MACHINE WORKS
WHITINSVILLE, MASSACHUSETTS, U. S. A.
Charlotte, N. C. Atlanta, Ga.



MARQUETTE NOVIBRA ROLLER BEARING SPINDLES for Paper Tubes

● **Another *exclusive* MARQUETTE NOVIBRA feature! Patented spring buttons at tip and base of blade assure snug fit and true seat location of paper tubes. This is but one of the many reasons why MARQUETTE NOVIBRA Spindles give faster production at lower cost. Illustrated circular will be mailed on request.**

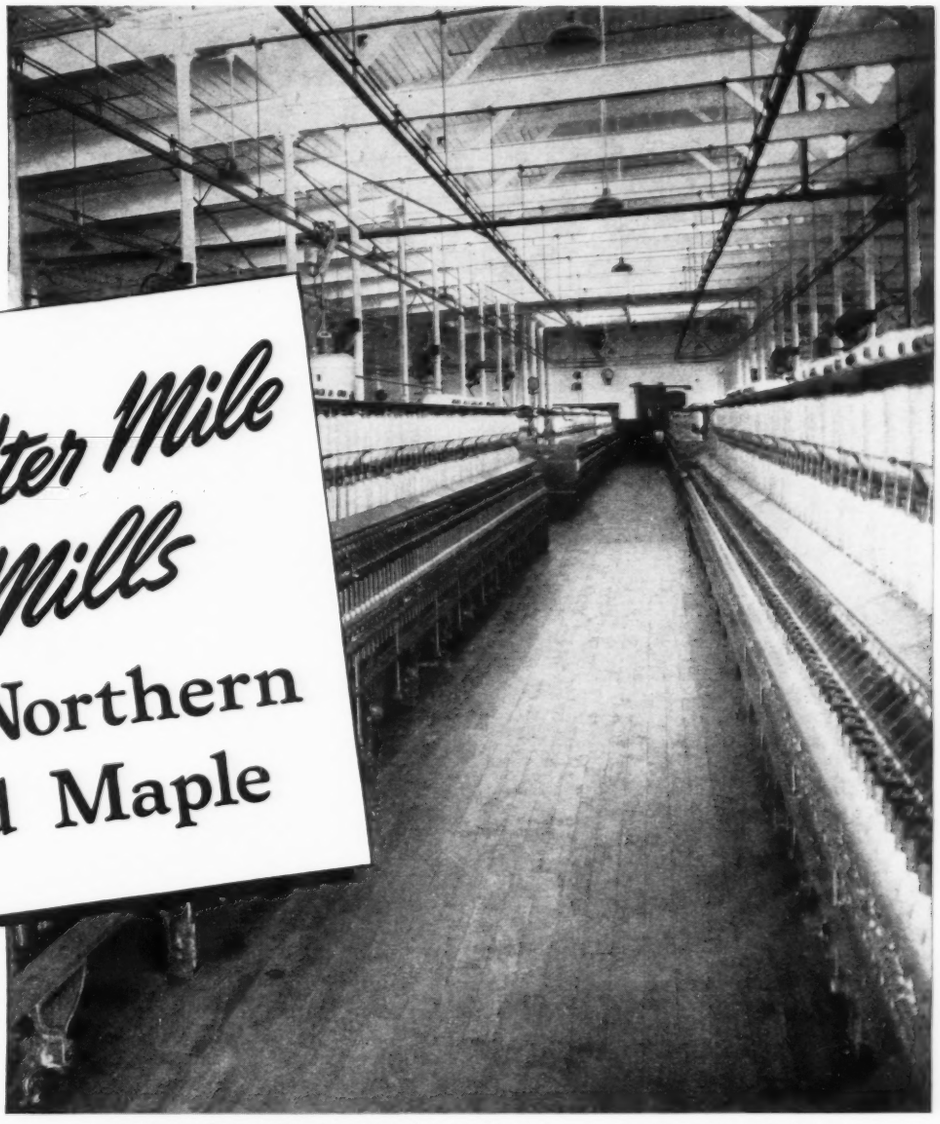
PROTECTED UNDER ONE OR MORE OF THE FOLLOWING U. S. PATENTS: 2168247, 2168248, 2168249.

MARQUETTE TEXTILE SPINDLES NOVIBRA

THE MARQUETTE METAL PRODUCTS CO.

1170 GALEWOOD DRIVE . . . . . CLEVELAND, OHIO

Boyd-Miller, 808 Woodside Bldg., Greenville, S. C. . . . Shipley Machine, 28 West Dayton St., Kingston, Pa.



MFMA *Hard Maple floor in mill of Chiquola Manufacturing Company, Honea Path, S. C.*

You could walk for miles in Southern mills and never step off Maple floors. Some laid at the turn of the century, some almost yesterday—all giving satisfaction every day.

The Chiquola Manufacturing Company, plant illustrated, first laid Northern Hard Maple in 1902. Jas. D. Hammett, Assistant Treasurer, says "We have always considered it to stand up well and give complete satisfaction."

Hard Maple *always* stands up well—and stays smooth, speeds up traffic, is easy on workers, cuts floor costs.

So smooth and hard and tough, it actually "polishes" under traffic, creates no dust, doesn't catch lint—and is warm, dry, resilient and comfortable. It simplifies alterations and machinery shifting—lowers cleaning and maintenance costs, provides lowest cost per year of service.

It will do the same in *your* mill. When you buy trademarked **MFMA** Maple you are sure of all *Northern Hard* Maple, slow-grown in Northern forests. Ask your architect.

MAPLE FLOORING MANUFACTURERS ASSOCIATION
1794 McCormick Building, Chicago, Illinois

• • •

See our catalog data in Sweet's, Sec. 11/78.
Write for leaflet on heavy-duty finishes for old or new floors.

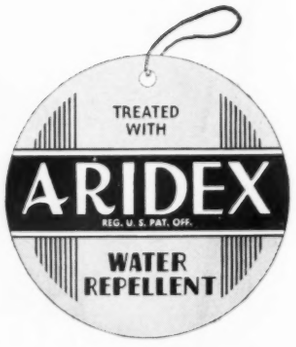
Floor *with* MFMA Maple

REG. U.S. PAT. OFF

(NORTHERN HARD)

MORE BUSINESS *your* WAY

when garments wear this tag . . .



The use of ARIDEX water repellent on garments has made amazing strides during the past few years. And there are some mighty good reasons why! ARIDEX is a powerful sales feature for manufacturer and retailer alike. Customers look for the ARIDEX tag on garments because it means protection against all sorts of weather, come what may... rain, snow or sleet. Customers are pleased by the greater comfort and the way garments hold their appearance. ARIDEX is a superior water repellent that becomes an invisible film covering the individual fibers of a cloth, yet does not clog the pores of the fabrics—allowing for the proper, healthful circulation of air. ARIDEX can help produce faster-selling merchandise. We'll be glad to send complete information. Write today!

Sales Offices: Boston, Mass., Charlotte, N. C., Chicago, Ill., New York, N. Y., Philadelphia, Pa., Providence, R. I., & San Francisco, Calif. Represented in Canada by Canadian Industries, Limited, Box 1260, Montreal, Quebec, and 372 Bay Street, Toronto, Ontario.

DU PONT

E. I. du Pont de Nemours & Co. (Inc.)
Fine Chemicals Division
Wilmington, Delaware

No Stops

It's a no-stop run when your frames start up with Pawtucket Rings. The low number of ends down . . . and longer traveler life . . . reduce both operating and maintenance costs. Pawtucket Rings give your travelers a "turn for the better."

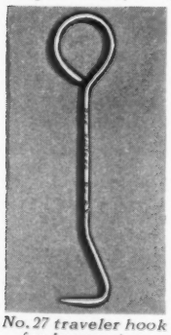
PAWTUCKET SPINNING RING CO.
(Subsidiary of Saco-Lowell Shops)
CENTRAL FALLS, RHODE ISLAND

Vitritex finish

CUT OUT AND KEEP THIS INFORMATION FOR PERMANENT REFERENCE

This is number 3 of a series. Here you will find practical information of interest to users of rings

There is no element on the spinning frame which receives less care and more abuse than the spinning ring, a precision product, capable of rendering years of useful service, often under unfavorable conditions. One of the most fruitful sources of ring damage comes from travelers which are unsuitable to the job, and more often, from travelers which have been allowed to run too long. There is no trouble in selecting a traveler of the proper circle, weight, and flange, since these elements can be checked by means of gauges and micrometers. Of equal importance is the texture of the traveler, wire, its grain temper and hardness.



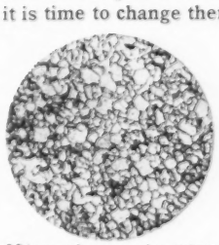
No. 27 traveler hook for heavy sizes

A coarse grain traveler stock, soft and poorly tempered, will soon deposit a microscopical layer of fine powder on the ring surface, which soon works its way into the pores of the ring, giving rise to that phenomenon known as "leading." A leaded ring causes end breakage, and weak and dirty yarn. On the other hand, a traveler which has not been properly tempered, and which is hard and brittle, will soon cut the ring, giving it an appearance as though it were treated with a file.

The traveler makers, especially in the United States, have worked with the ring makers so that today, there is generally a satisfactory balance between hardness and temper of the ring and traveler surfaces, especially when the travelers are first installed.

No. 48 traveler hook for light sizes

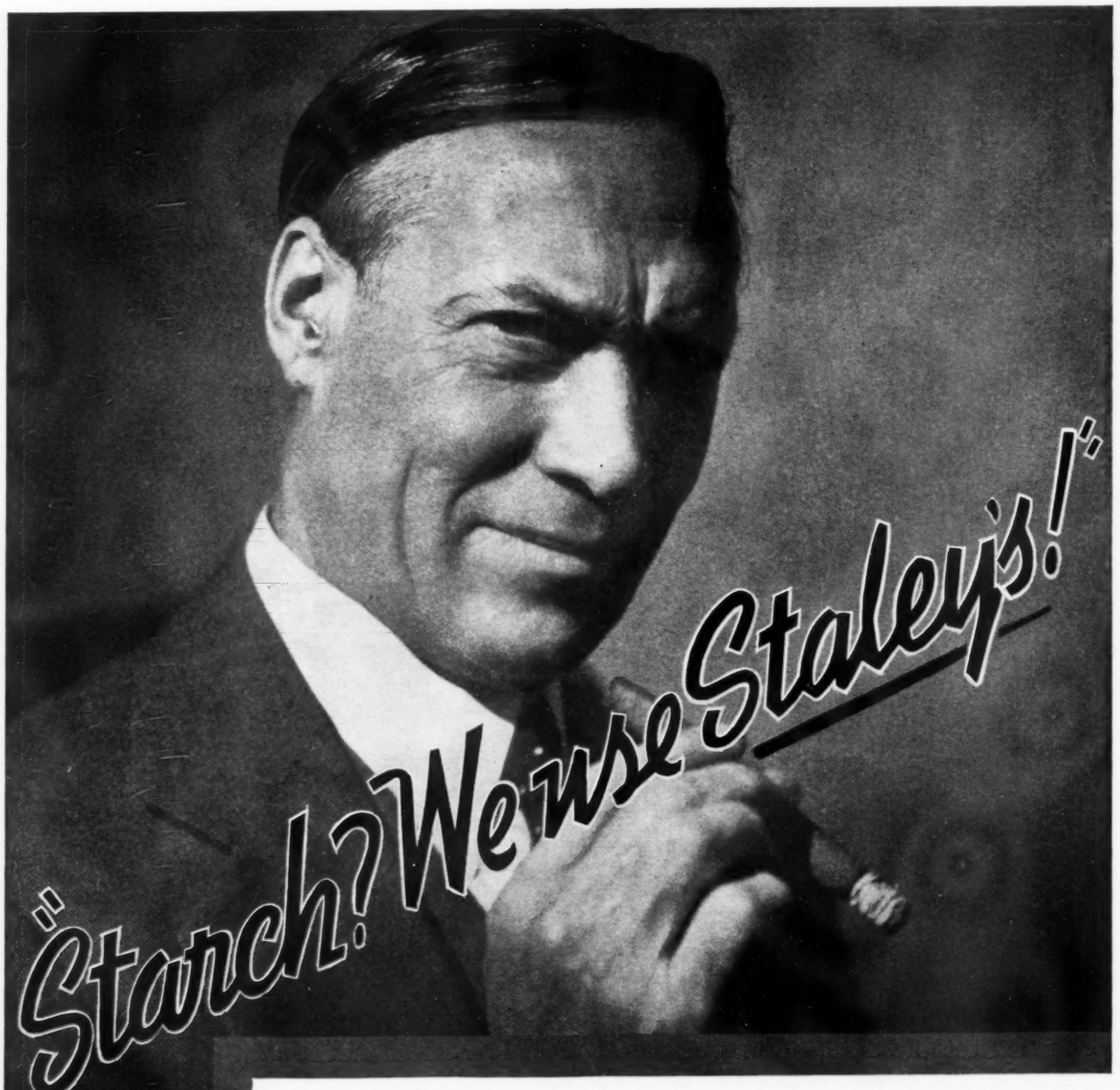
Many mills practice false economy in allowing their travelers to run too long. No traveler should stay on the ring until it burns off — a practice sometimes followed in the fine yarn mills. As soon as the points of the horns show wear, or begin to turb blue, it is time to change them. Observation, with a few simple control tests, will soon establish the proper interval between traveler changes on any given set of frames.



Microphoto showing average grain structure for travelers

Removing the old travelers is a problem. Some overseers allow the traveler changers to break the old travelers with a stout blow from a roving bobbin. Removing them with a traveler wrench is certainly a safer and more mechanical method.

Saco-Lowell Shops, Boston, Mass.



Get experienced mill men talking about starch and you'll find Staley users are SOLD—and they stay sold—on Staley Starches. That's because from Staley you get the RIGHT Starch, right for each specific textile use. It takes long experience, modern laboratories and trained personnel to supply this—and Staley has what it takes.

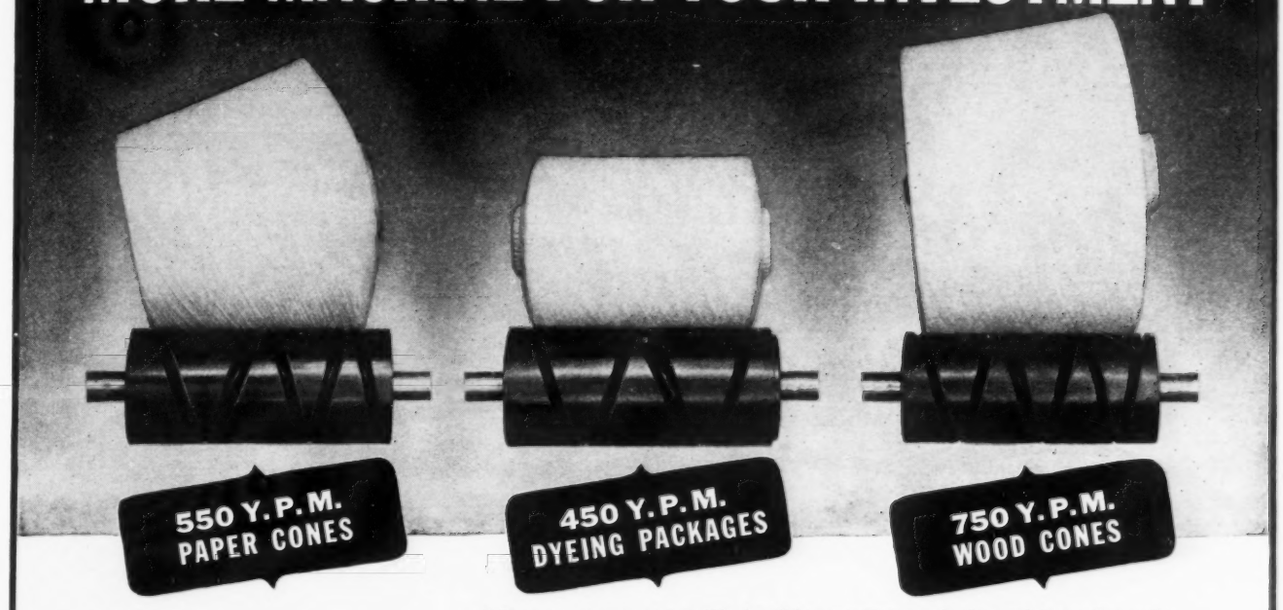
A. E. STALEY MANUFACTURING CO.

DECATUR, ILL.

ATLANTA PHILADELPHIA DALLAS NEW YORK
SPARTANBURG SAN FRANCISCO CHICAGO BOSTON

Higher Winding Speeds Give You

MORE MACHINE FOR YOUR INVESTMENT



Many cotton yarn mills in this country and abroad have found — in the Roto-Coner — an opportunity to increase *production* as well as improve quality of winding.

Compare the figures above with the speeds of your present machines. Keep in mind, also, that with the rotating-traverse winder, there are no cams to limit the winding speed, which is only limited by the way the yarn comes off the bobbin. Elimination of cams also means lowest maintenance cost.

From many sources, we have heard that mills consider the Roto-Coner "outstanding" in principle, construction and ease of operation — in the words of one mill executive, "the finest development in Textile Machinery in many years."

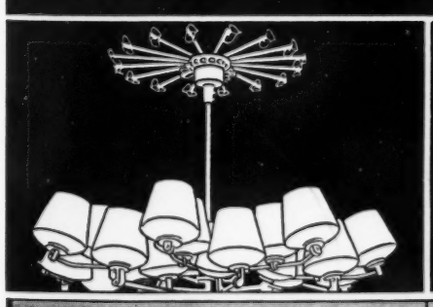
ROTO-CONER

UNIVERSAL WINDING COMPANY
PROVIDENCE, R. I.

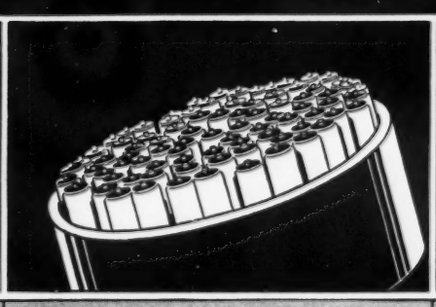
THE ROTATING TRAVERSE WINDER

BOSTON · PHILADELPHIA · UTICA · CHARLOTTE · ATLANTA

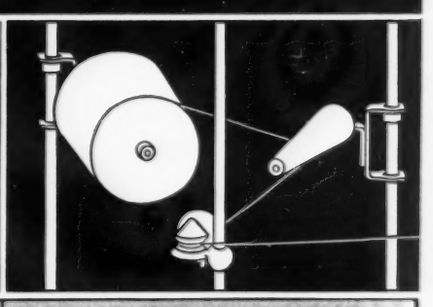
QUALITY PACKAGES FOR KNITTING, DYEING, WEAVING



Stronger, cleaner yarn, free from roll cuts, delivers freely from Roto-Cones, properly shaped and uniform in density.



Absence of hard ends (due to quick reversal of yarn at ends of package) means more even penetration of dye.



And better beams and weave room savings result from cleaner yarn, minimum and uniform tension, better slubbing.

THAT NEW TAYLOR PRE-ACT WOULD LICK THIS CONTROL TROUBLE, CHIEF. IT WOULDN'T COST MUCH, YOU KNOW
O.K., Pete; try it, before these sudden control upsets lick us. If this Pre-Act does the job, it's a few dollars mighty well spent!

WHAT WILL TAYLOR'S PRE-ACT DO FOR YOU?

Stop those costly, sudden control disturbances. Try this new Taylor Fulscope Control effect based on* rate *of control-point deviation.

PRE-ACT, Taylor's unique *new* control effect, is available with both *Adjustable Sensitivity* and *Automatic Reset* types of the great new Fulscope Controller. It reduces the over-peaking and oscillating which sudden control disturbances have been causing you on continuous processes that involve both long time lags and large capacities. The reason-why is apparent: Pre-Act brings about an immediate, relatively larger valve action based on *rate* of control-point deviation.

You may get Pre-Act as a standard, fully adjustable unit assembly which may be incorporated in the new Recording or Indicating Taylor Fulscope Controllers, either originally or when you desire to.

Ask the Taylor man for full details TODAY. Or write Taylor Instrument Companies, Rochester, N. Y. Plant also in Toronto, Canada. In Great Britain: Short & Mason, Ltd., London, England.

These Design Features of the New Taylor Fulscope Controllers Insure Consistently Better Performance

Automatic Reset (in the instrument case)—Fully and continuously adjustable over a much wider range, permitting the one correct adjustment your specific requirements demand. Simply, precisely constructed for even performance and easy maintenance.

Fully Pneumatic Sensitivity Reduction—Gives you consistent performance throughout the wider sensitivity range; minimizes the effects of instrument friction; and automatically compensates for fluctuations in air supply pressure. Pen movement and output pressure have a close linear relationship that insures better control on difficult applications. What's more, you may vary the controller sensitivity throughout the entire range with negligible changing in output pressure and without disturbance to the control point.

Universal Application— Same control mechanism for temperature, pressure, rate of flow, and liquid level in recording and indicating controllers. (Temperature and pressure recording controllers are available in double-duty form.)

Quick-Change Unit Construction—No soldered joints, no screws to drop. Cases drilled and tapped to accommodate most complete forms of control and to enable you to maintain easily and change from one form to another in the field.

Pre-Calibrated Actuating System—More easily interchangeable than ever.

Magnifying Adjustment Dials—Easier to read and adjust; calibrated in absolute units.

Easy Convertibility— From direct to reverse action.

Universal Case— Made of die-cast aluminum for face or flush mounting.

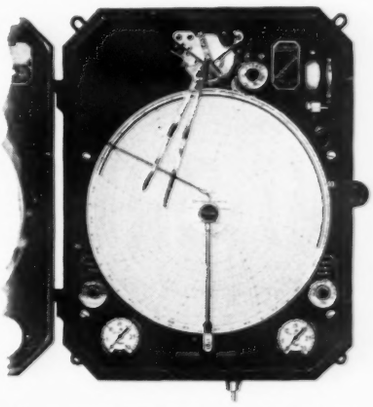
Electric Chart Clocks—Redesigned, with improved coils, oil-immersed gears and slower speed motors. Spring-driven clocks an alternate. Explosion-proof electric clocks also available.

Inbuilt Air Filters—Easy to clean, more efficient and accessible. They supplement large filter and drip well.

Quicker Chart Changing—Separate pen lifter and hub nut eliminated.

Accessibility—Dials and knobs instantly accessible without removing chart and chart plate.

Longer Life—All vital parts of 18-8 stainless steel. Neoprene gaskets throughout.



Only the New Taylor Fulscope Controller gives you these

5 FORMS OF CONTROL

Fixed High Sensitivity—for on-and-off control on applications with small time lags and large capacities, regardless of load changes.

Adjustable Sensitivity—for throttling control on applications with a wide range of time lags and capacities, where there are infrequent or minor load changes.

Adjustable Sensitivity with Automatic Reset (in same case)—for precision control on applications involving a wide range of time lags and capacities, with gradual, sustained load changes.

Adjustable Sensitivity with Pre-Act—for applications with a wide range of time lags and capacities, where there are sudden, momentary disturbances *without* sustained load changes.

Adjustable Sensitivity with Automatic Reset and Pre-Act—for ultimate precision control on applications involving a wide range of time lags and capacities *with* sudden and sustained load changes. The Fulscope Controller, with all three effects, can be adapted to almost any of your control problems.

Taylor

Indicating / Recording • Controlling

TEMPERATURE, PRESSURE, FLOW *and* LEVEL INSTRUMENTS

NO GREAT SHAKES

A FEW YEARS BACK, with the slower moving spindles and smaller packages, you didn't have to worry much about vibration. Today, with speeds two or three times higher and larger packages, some plant managers *still* don't have to worry about vibration. These plant managers use lubricants that meet the higher speeds and larger packages of today's production.

When the chief concern of spindle lubricants was to keep down consumption of power, Shell did an able job there. As larger packages and higher speeds developed, new problems arose. Shell's technical staff foresaw and prepared to handle these more complex requirements. They were ready with lubricants to cushion the extra vibration, lubricants that are "clean," of low friction load and freedom from gum.

That's the way Shell serves industry. Shell men don't stay in laboratories and offices. They've learned that keeping up with the changing lubrication needs means facing problems as they arise, *where they arise* . . . in your machines, in your shops. This method has gained for Shell an enviable record of having the right lubricants when lubricants are the answer. ***Why not call in your Shell man today?***

SHELL

SHELL INDUSTRIAL LUBRICANTS

TUFFERIZED Card Clothing

U. S. PATENT NO. 2,174,173

Helps You "Swing" into Higher Card Room Production

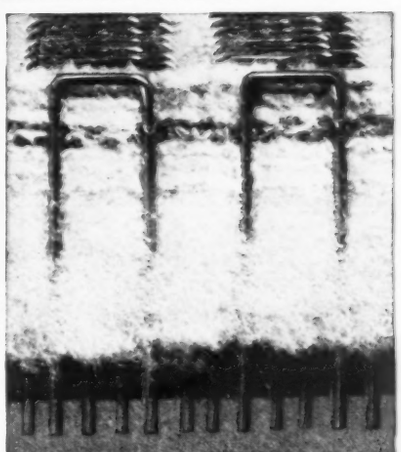
The precision excellence of the new Tufferized Card Clothing wins new friends every day. This exclusive, patented-precision-process accurately cuts the wires and forms the teeth to seat flat and firmly into the famous, patented Tuffer foundation with precision accuracy. This allows more accurate setting from beginning to end, more uniform carding and higher production.

Write for additional information or ask our representative

HOWARD BROS. MFG. CO.

HOME OFFICE AND FACTORY: WORCESTER, MASS.

Southern Plants: Atlanta, Ga., Gastonia, N. C. *Branch Offices:* Philadelphia, Dallas
Canadian Agents: Colwool Accessories, Ltd., Toronto 2, Canada



Microphotograph shows how Tufferized Card Clothing wires seat square, flat, and firmly into the foundation with wires parallel..even in length..spaced uniformly

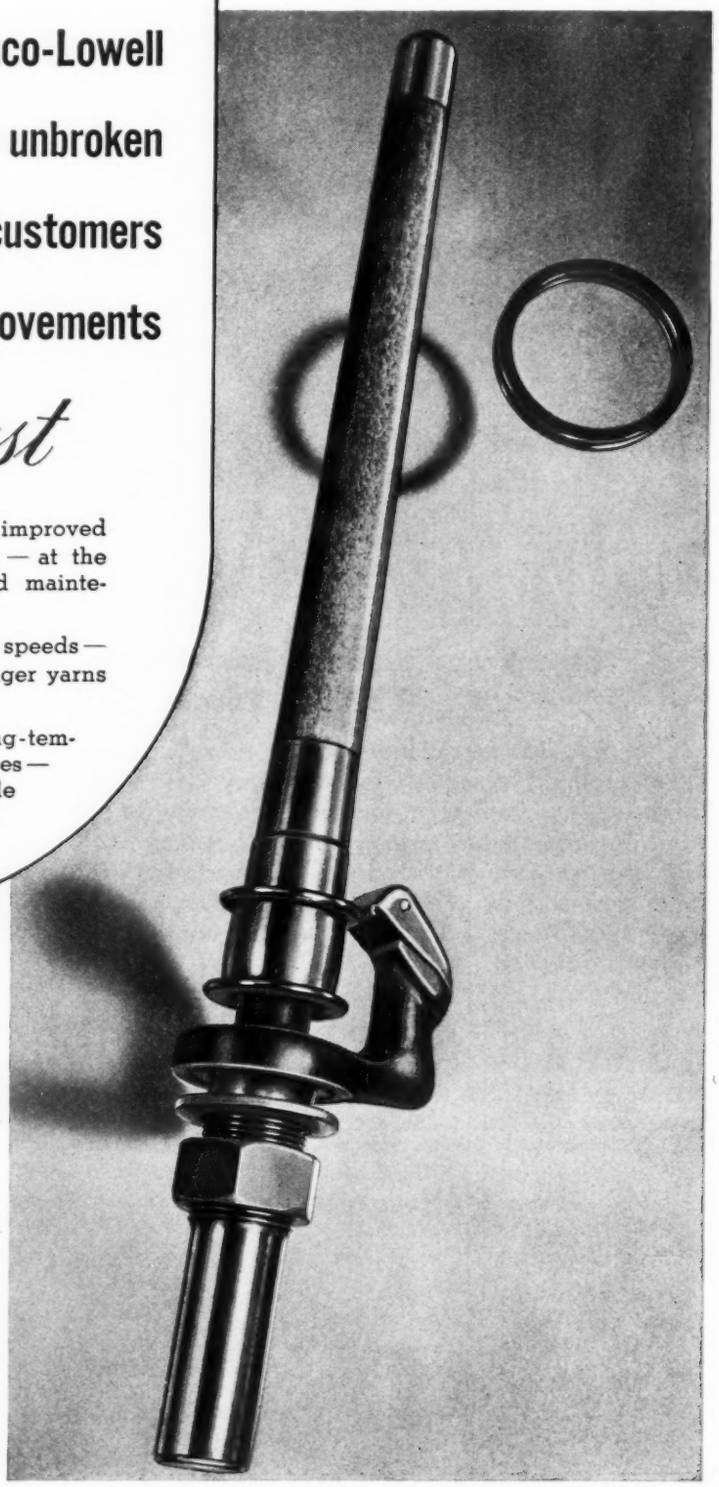
Products: Card Clothing for Woolen, Worsted, Cotton, Asbestos, and Silk Cards — Napper Clothing, Brush Clothing, Strickles, Emery Fillets, Top Flats Recovered and extra sets loaned at all plants — Lickerins and Garnett Cylinders from 4 to 30 inches and Metallic Card Breasts Rewired at Southern Plant — Midgley Patented Hand Stripping Cards, Howard's Special Hand Stripping Cards and Inserted-Eye and Regular Wire Heddles

As Always **Saco-Lowell continues to maintain its unbroken record of bringing to its customers the most advanced improvements and developments *First***

LONG DRAFT SPINNING which has improved quality, simplified cotton spinning — at the same time lowering operating and maintenance costs.

TAPE DRIVE which stabilized spindle speeds — and made it possible to secure stronger yarns of more even, uniform twist.

SPINDLES with heat-treated spring-tempered blades and oversize oil bases — improvements which have made present-day high speeds possible and practical.



and now . . .

Wooden Sleeve Spindle —
***and* Vitritex Rings**

In the past many mills have — with profit — installed Saco-Lowell Better Draft as the first stage in a modernization plan. Now these mills can enter a second phase of this plan by installing Saco-Lowell modern high speed Wooden Sleeve Spindles and Vitritex Rings.

Frames so fitted, although not comparable with our modern high duty equipment, are in a better competitive position — since higher speeds of spindle and traveler are feasible.

The installation of a test unit operated under your own conditions will quickly show you what improvements can be obtained with these new assemblies.

Our engineers will be glad to prepare a fact-finding survey promptly on request.

SACO-LOWELL SHOPS

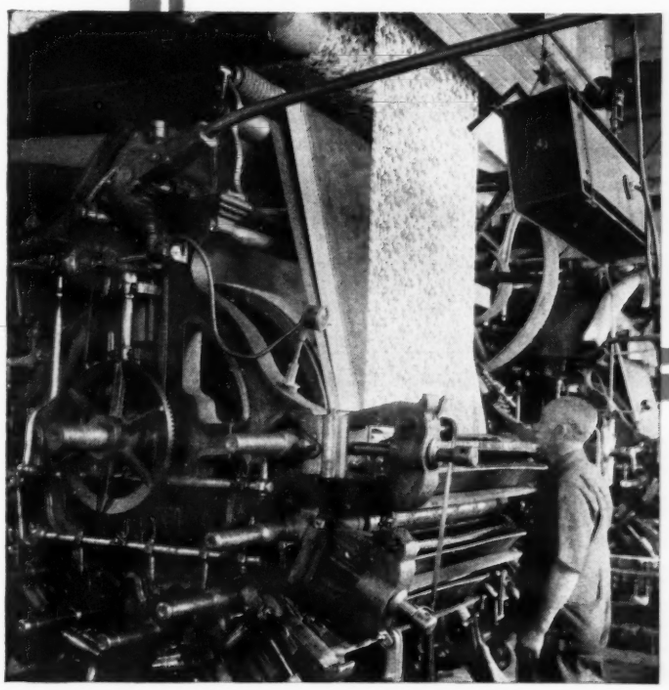
60 BATTERYMARCH STREET, BOSTON, MASS.

CHARLOTTE, N. C. GREENVILLE, S. C. ATLANTA, GA.

YARMOR 302

DISPERSES PIGMENTS PROPERLY

IN PRINTING PASTES



Printing is clearer and crisper in detail and color when Yarmor is used in the paste. Leading mills are using it to get better prints.

Yarmor* 302—penetrant, dispersant, detergent-assistant—packs plenty of punch in all wet-processing. Here's how it works in printing.

When Yarmor is used as a pasting aid, sharp designs of uniformly bright color result. The tendency to speck is markedly reduced. In the paste, Yarmor's penetrant action lowers surface and interfacial tensions so that pigment particles are completely wetted. Yarmor's dispersing action then spreads the individual particles evenly throughout the paste, and holds them in suspension against the tendency to agglomerate until the design has been transferred to the fabric. Thus designs are sharp, colors are bright and clear, and specks are kept from forming.

Yarmor 302 thus is a triple-action assistant, and does the same fine work wherever water is used. It is efficient and economical, because it is highly concentrated. A little does a lot, and does it well. Try Yarmor sometime soon—for printing, in dyeing, or in any wet-processing operations. Take advantage of this low-cost triple-action aid.

Naval Stores Department

HERCULES POWDER COMPANY

903 MARKET STREET, WILMINGTON, DELAWARE

*REG. U. S. PAT. OFF. BY HERCULES POWDER COMPANY

YARMOR 302 GIVES TRIPLE ACTION

WETS

DISPERSES

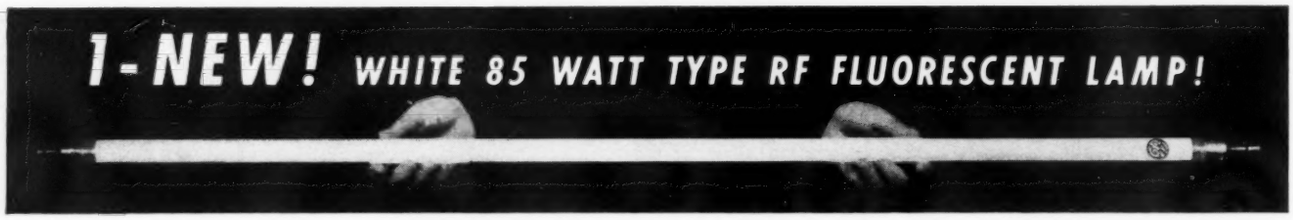
SUSPENDS FOR RINSING

00-58

General Electric announces

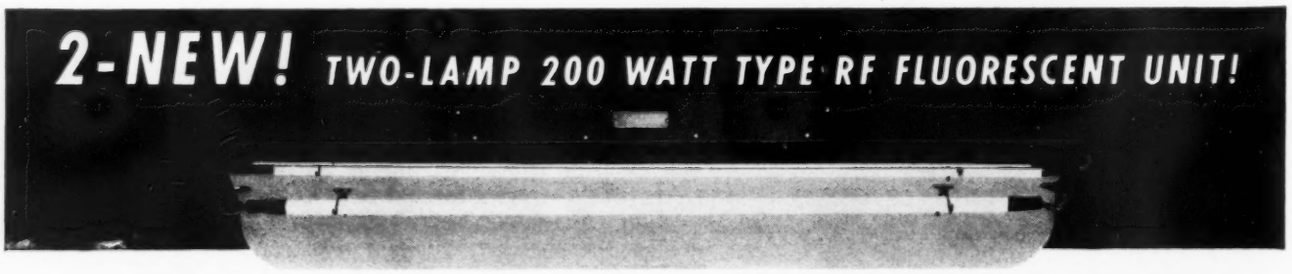
2 NEW DEVELOPMENTS IN FLUORESCENT LIGHTING OF IMPORTANCE TO INDUSTRY!

1-NEW! WHITE 85 WATT TYPE RF FLUORESCENT LAMP!



Ready for delivery May 1st is General Electric's new White 85 watt type RF Fluorescent lamp. This lamp, using 100 watts overall, is similar to the present Blue-White 85 watt RF Fluorescent lamp. In fact the two lamps may be used interchangeably in the same fixture. However, the color of the new White lamp more closely resembles natural daylight than does the Blue-White lamp. For this reason, the White lamp will prove pleasing and practical for many industrial applications, particularly where color discrimination is important. Both lamps provide high levels of industrial illumination and have long life and low operating cost.

2-NEW! TWO-LAMP 200 WATT TYPE RF FLUORESCENT UNIT!



Also ready for delivery May 1st is General Electric's new Two-lamp 200 watt Type RF Fluorescent unit. This was especially designed for the industrial field to fill a long-felt need for a single unit that produced a large quantity of light at high efficiency.

The complete unit includes two 85 watt RF Fluorescent lamps, and a fixture (reflector and auxiliary) which consumes 30 watts, making a total of 200 watts for the whole unit. Because this new unit operates on the rectified principle, stroboscopic effect is practically eliminated. When equipped with Blue-White lamps, this new Two-lamp unit produces about 8500 lumens, and nearly as much when equipped with the new White lamps.

Call on **GENERAL ELECTRIC**
for better than daylight in INDUSTRY

EFFICIENT . . . ECONOMICAL . . . DEPENDABLE . . . FLEXIBLE

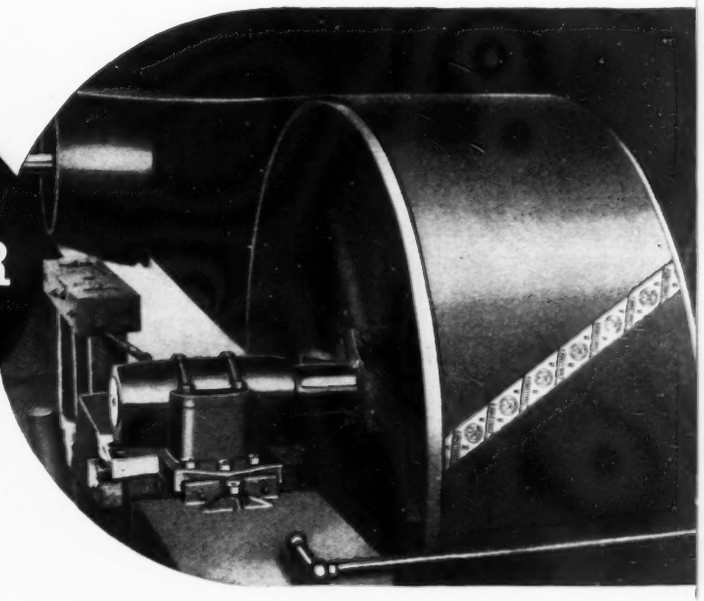
TEAR OUT THIS COUPON FOR USEFUL INFORMATION

General Electric Company, Dept. 166-C-E Nela Park, Cleveland, O. Please send me your new bulletin with information about the New White 85 watt Type RF Fluorescent lamp and the New Two-lamp 200 watt type RF Fluorescent unit.

Name.....
Company.....
Street.....
City.....*State*.....

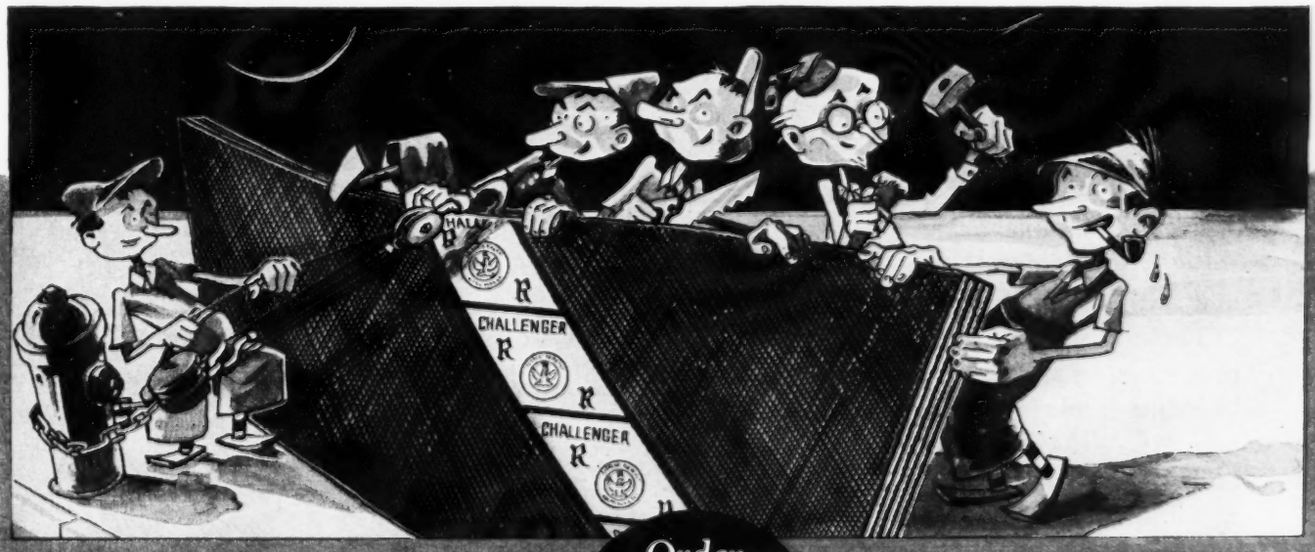
Transmitting Power At Greatest Efficiency

REPUBLIC'S CHALLENGER BELTING



Complete operating efficiency of transmission drives depends upon low maintenance costs, preparedness for overload emergencies and steady flow of power without disturbing vibrations. Rugged, heavy-duty Challenger Transmission Belting has been a consistent aid to this type of performance in every industrial field. The merits of its operating ability—endurance, low stretch, even tension and minimum slippage—have been outstanding under the most severe conditions of shock and stress. Arrange with your Republic Distributor for a Challenger installation. Check for lower maintenance costs and superior serviceability on your own grounds. REPUBLIC RUBBER DIVISION OF LEE RUBBER & TIRE CORPORATION, YOUNGSTOWN, OHIO.

HOSE • BELTING • PACKING • MOLDED PRODUCTS



REPUBLIC RUBBER

Order REPUBLIC PRODUCTS *from your* DISTRIBUTOR

ARMOUR'S TEXTILE SOAPS

LIKE ships upon the high seas, textile mills occasionally find themselves in rough waters.

Demands for higher standards, new processes, increased output—all these tend to unbalance production schedules. At such times ARMOUR'S TEXTILE SOAPS can always be relied upon to maintain their part of production as detergents and wetting agents —to provide smooth sailing.

FLINT SOAP—Has a titer from 41 to 42 degrees centigrade.

INDUSTRIAL SOAP—Has a titer from 39 to 40 degrees centigrade.

Both soaps are tallow base soaps, neutral, and available in chips and powder.

These soaps are intended for heavy-duty processing in textile work. Dyeing, bleaching, scouring, fulling. In every process ARMOUR'S detergents and wetting agents, made under conditions of strict laboratory control, deliver exactly the results you demand.

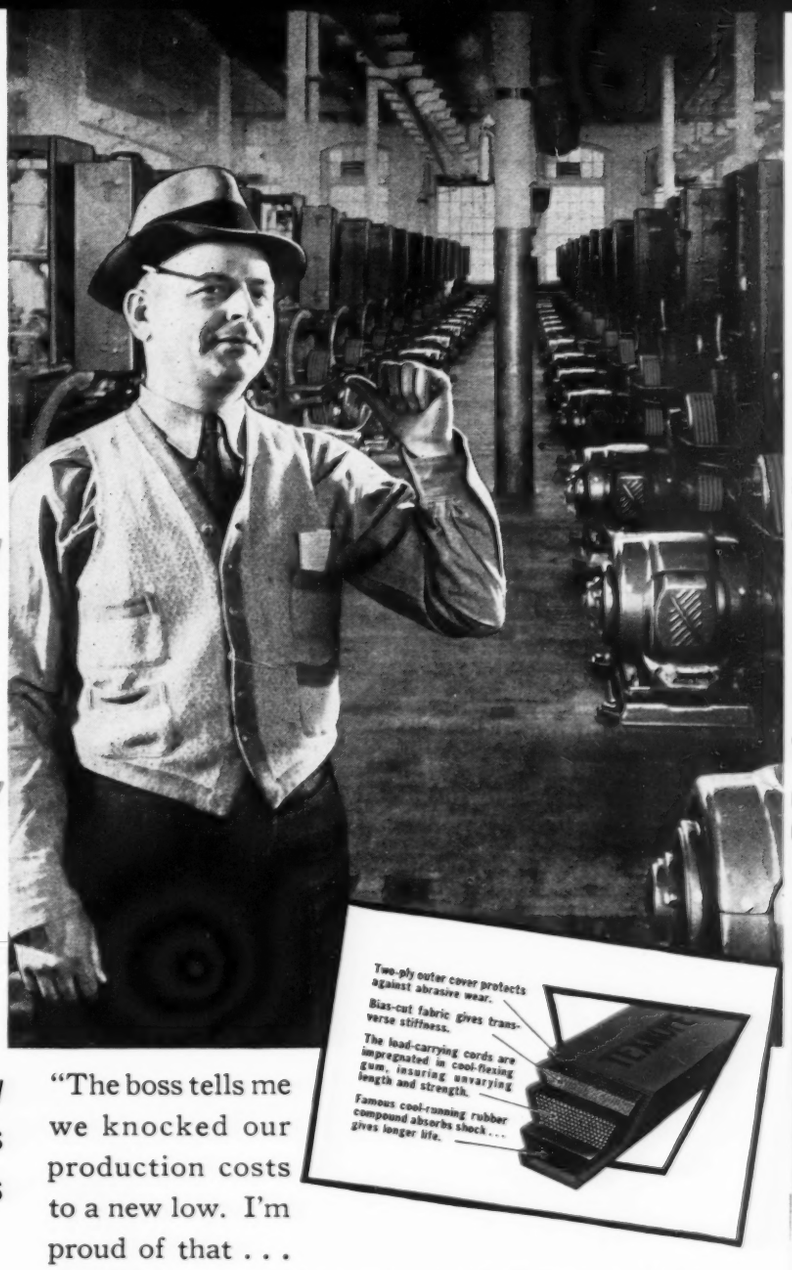
Deep penetration and fast rinsing—thorough lubrication and complete cleansing—all with the highest factor of safety. These soaps will aid in giving your customers the kinds of fabrics that are distinctly excellent in appearance and hand.

Therefore we urge you to order a quantity of ARMOUR'S TALLOW TEXTILE SOAPS today for your heavy-duty work. Make an "on-the-job" test with these precision-made soaps in your own plant. Prove to yourself their economy and efficiency for your purposes. There are offices and branch houses in principal cities.

For light-duty work, there are CERTIFIED SOAP, OLIVE SOAP, and TEXSCOUR.

Armour and Company
Industrial Soap Department
1355 W. 31ST STREET CHICAGO, ILLINOIS

"MY BOSS HAS THE RIGHT IDEA!"


Two-ply outer cover protects against abrasive wear.
Bias-cut fabric gives transverse stiffness.
The load-carrying cords are impregnated in cool-flexing gum, insuring unvarying length and strength.
Famous cool-running rubber compound absorbs shock . . . gives longer life.

"He's NOT Trying to Make Production Profits Today Using Yesterday's Transmission Equipment! He's SWITCHED to Texrope . . . the Drive that Cuts Textile Mill Transmission Costs."

"MY BOSS is a smart man. He's not just *thinking* about extra profits . . . he's *going out* after them!

"Take a look at that line of spinning frames. There's a picture of efficiency that would make any textile man excited. No wasted space . . . nothing over head to blot out the light our operators need.

"That's because we now equip our machines with individual Texrope V-belt Drives. There they are — quietly doing their job . . . safely . . . not slipping or jerking . . . not breaking fragile yarns on the frames . . . eliminating spattered oil on goods!

"The boss tells me we knocked our production costs to a new low. I'm proud of that . . . for I'm the one that suggested Texrope Drives when the boss suggested lower costs."

Go After Extra Profits with Texrope!

That's the *right* idea men in hundreds of textile mills are getting today! And it's the idea that's behind the sensational rise of Texrope V-belt Drives to number one position as the most popular way to transmit power to a machine!

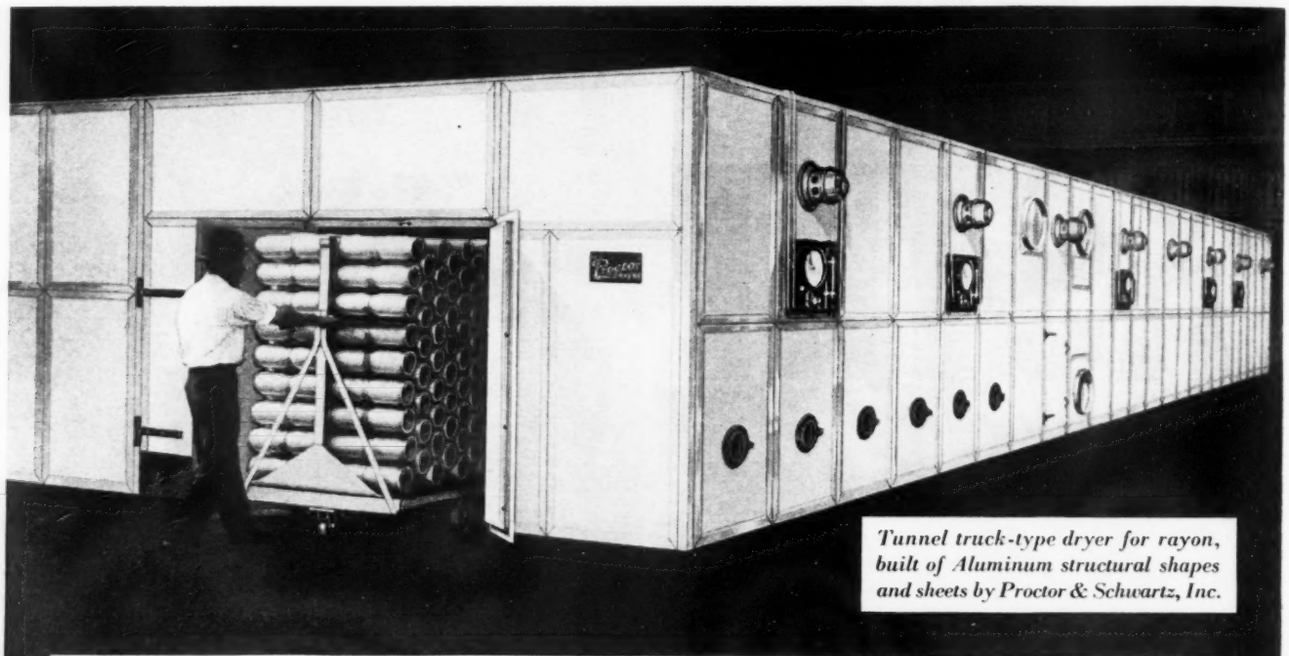
For complete facts on Texrope Drives . . . and how you can go after extra profits by using them on your machines . . . call the district office near you, or write Allis-Chalmers, Milwaukee. A 1226

Vari-Pitch Speed Changers • Texrope V-Belts • Duro-Brace Texsteel Sheaves • Vari-Pitch Sheaves • Standard Cast Iron Sheaves • Adjustable Pitch Diameter Texsteel Sheaves • 2-3-4 Combination Sheaves • Paraline Automatic Motor Bases • Oil Field Drilling Rigs.

Belts by Goodrich

ALLIS-CHALMERS

MILWAUKEE · WISCONSIN



Tunnel truck-type dryer for rayon, built of Aluminum structural shapes and sheets by Proctor & Schwartz, Inc.

Acid fumes are in the Air

BUT THIS DRYER IS *"BUILT TO TAKE IT"*

Aluminum is highly resistant to the corrosive attack of the acid fumes present where rayon is processed. That's why Proctor & Schwartz built this dryer entirely of Aluminum Alloys. The equipment will have long life. Condensation which drips from Aluminum is colorless. It causes no stains.

The framework, fabricated from Alcoa Aluminum extruded structural shapes, is designed to insure strength and rigidity of all parts. It is covered with Alcoa Aluminum sheet. Ventilating ducts, fans and heating units are also fabricated from Aluminum Alloys.

In *your* processes, Aluminum may serve you to equal advantage. It offers light weight, resistance to corrosion, fine appearance and ease of fabrication by all metal-working methods. Alcoa engineers welcome an opportunity to discuss your problems.

ALUMINUM COMPANY OF AMERICA, 1939 Gulf Building, Pittsburgh, Penna.

Reg. U.S. Pat. Off.

ALCOA

ALUMINUM

ALCOA·ALUMINUM

Introducing

DYPENOL

A HARTEX PRODUCT

THE IDEAL *Dry Mercerizing* PENETRANT

Completely Eliminates Boiling-Out or Wetting-Out Before Mercerizing

• Product of HARTEX research, DYPENOL is the ideal dry mercerizing penetrant. Yarn mercerized with the assistance of DYPENOL will be stronger, more uniform and have a greater luster and softer handle. In piece goods, the quality of the fabric will be greatly improved since the use of DYPENOL increases the "degree of mercerization." Other important features are easier control of caustic strength, increased weight of finished yarn and greater production speeds. DYPENOL is economical too, only a small quantity is needed to give the desired results. *Write for further information.*

NOTE THESE OUTSTANDING ADVANTAGES OF DYPENOL

- Does not lose its wetting power on standing.
- Does not form a scum in the caustic.
- Easily washed out of the goods.
- Has a low solvent effect on cotton waxes and pectins.
- Has a low exhaustion rate: is only slightly absorbed by cotton, thereby permitting larger quantities of cotton to be treated before additions of penetrant are made necessary.

HART PRODUCTS BASED ON RESEARCH

THE HART PRODUCTS CORPORATION

MANUFACTURING CHEMISTS

1440 BROADWAY • NEW YORK, N. Y.

GARGOYLE VELOCITE OILS HELP

Whittle Down Power Costs!

GARGOYLE VELOCITE OILS help keep power costs low in high-speed spindles. These quick-acting oils provide instant film coverage in extremely small bolster clearances. They resist the oxidation, gumming, and increase in viscosity which cause excessive power consumption. They help keep costs down.

CALL IN Socony-Vacuum for

You'll Profit from these "Exclusives"

☞ **SKILLED LUBRICATION COUNSEL** of a Socony-Vacuum man backed by 74 years' experience . . . the greatest in the Petroleum Industry.

☞ **A COMPLETE LINE** of Lubricants . . . the scientifically correct lubricant for every type of machine you now own . . . or will buy.

Correct Lubrication

☞ **NEW LUBRICANTS** ahead of new needs . . . developed in close cooperation with machine builders by famous Socony-Vacuum laboratories.

☞ **HALF A MILLION CASE HISTORIES** to guide our engineers in recommending the right use of these lubricants to earn Lubrication Profits for you.

☞ **DISTRIBUTION** throughout the world. The same high-quality lubricants available everywhere.

• • •

SOCONY-VACUUM OIL CO., INC.
Standard Oil of New York Division • White Star Division • Lubrite Division • Chicago Division • White Eagle Division • Wadhams Division • Magnolia Petroleum Company • General Petroleum Corporation of California

GARGOYLE
Lubricants

BELIEVE it or not!

With Apologies to Ripley

Some replacement parts take the efficiency out of the most modern textile machines.

A part that fits imperfectly, wears quickly or that breaks easily under the strain of high speed, won't let the most modern machine perform at its best.

Today's modernization of textile mill machinery is as much a matter of PARTS as of machine. The most modern machine MUST have strong, accurate **parts**. On the other hand, the oldest, out-of-date machine will operate more smoothly and efficiently if you put modern, close fitting, efficient **parts** in it.

In selecting your replacement parts demand those that are made by textile men who have studied the weak points of present day parts and have made parts that are stronger at these points—demand **parts** that are made from precision patterns to fit accurately the machine for which they are intended — demand parts that do not wear easily and that stand up under day-in-and-day-out strenuous speed.

Henderson Textile Repair Parts are these kind of parts and we'd like to prove it to you. May we?

HENDERSON FOUNDRY & MACHINE WORKS
HAMPTON GEORGIA

GULF
PERIODIC CONSULTATION SERVICE
a practical money-saving plan for industry
This cooperative service is available to the manufacturing, utility, transportation, mining and construction industries at no extra cost.
GULF
INDUSTRIAL
LUBRICATION

The "Booklet-of-the-Month"

FOR OPERATING OFFICIALS AND ENGINEERS

HERE is news for cost-conscious executives who are harassed by higher "non-controllables." With costs up and profits in the squeeze, operating men are welcoming this practical plan which they can put to work *immediately* to reduce the "controllables."

You agree, of course, that lubrication has a lot to do with the efficiency of your production and the cost of maintaining your equipment. *Now* you can use this modern method to establish a scientific lubrication procedure which will insure higher efficiency and lower costs for the maintenance and operation of your machinery.

For the operating executive who is seeking a means to increase manufacturing efficiency and profits, here is a *practical* plan through which *immediate action* can be taken! Write for your free copy of the booklet which explains this money-saving service to you.

GULF INDUSTRIAL LUBRICATION

With this advanced Lubrication Service, you can meet today's pressing need for Operating Economies. Write for your free copy of the booklet.

Gulf Oil Corporation—Gulf Refining Company
3813 Gulf Building, Pittsburgh, Pa.
Please send my copy—no charge—of the booklet "GULF PERIODIC CONSULTATION SERVICE."

Name.....

Company.....

Address.....

DON'T LET COAL BE THE PLANT PROBLEM CHILD

Admiralty Coal
DEPENDABLE ANTHRACITE
DENDRON
CRITERION COAL
RODA
STONEGA
Old Kentucky
CROZER
PREMIX
GENCO

In a plant of any size, the yearly expenditures for coal represent a sizeable investment. Often, however, the responsibility for buying coal is placed on the shoulders of someone whose training is along entirely different lines.

Under such circumstances, coal often becomes the plant problem child.

Your plant facilities and their coal requirements can only be determined through careful study. The right coal for your purpose can provide astonishing savings . . . savings that you owe it to your profits to make.

The General Coal Company offers expert counsel and coal from a variety of fields, each with special characteristics. One of them is certain to be best suited to your needs. In addition, the service facilities provided by General Coal's strategically located offices offer you further savings.

GENERAL COAL COMPANY

PHILADELPHIA, PA.

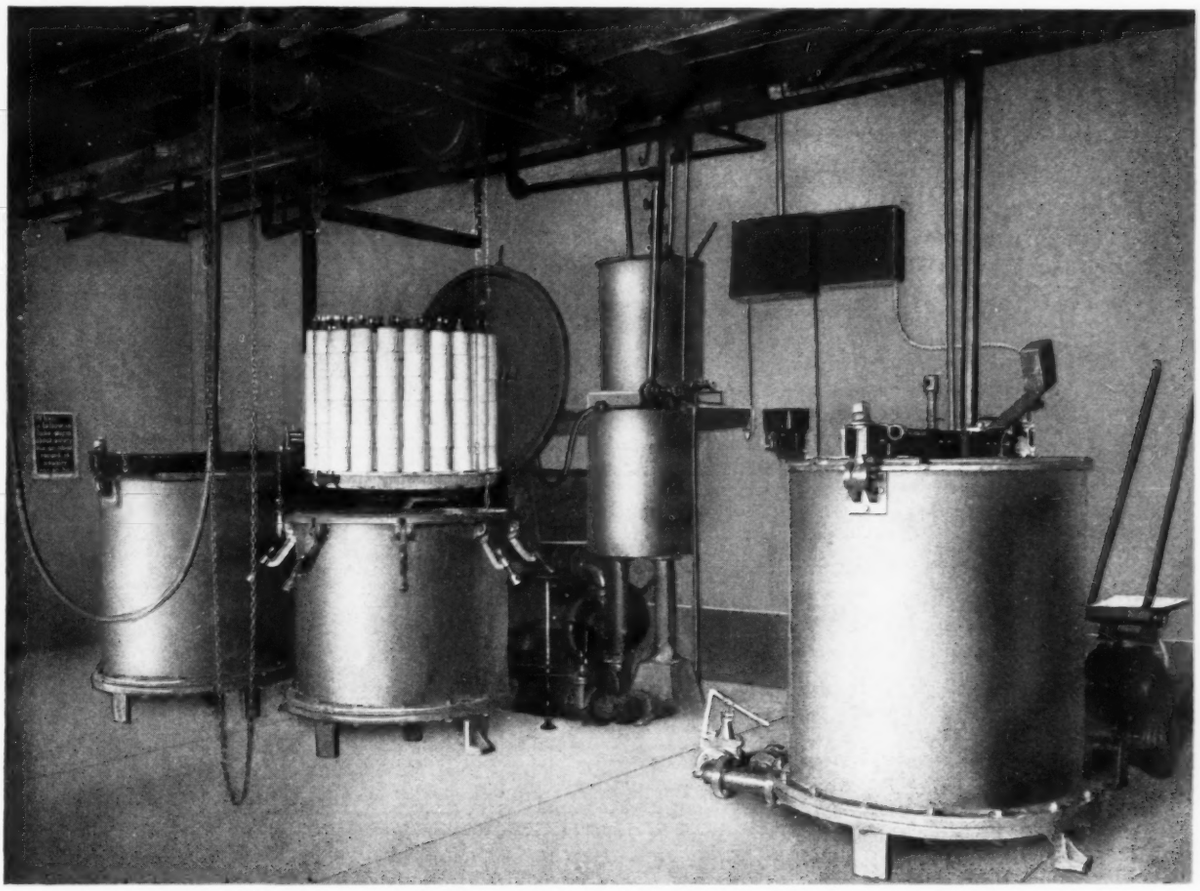
BOSTON CHARLOTTE, N. C. DETROIT CINCINNATI NEW YORK CHARLESTON, S. C. PITTSBURGH BUFFALO

GENERAL COAL

THE MORTON SYSTEM

•

STAINLESS STEEL COMBINATION PACKAGE AND BEAM DYEING MACHINES, IN HORIZONTAL AND VERTICAL DESIGN.



Built in capacities to dye from 1 to 1000 lbs.

•

Machines furnished with belt, tex rope or direct drive.

•

Preparatory kiers are furnished with the Morton System, insuring increased production and economy in operation.

•

MILLS USING THE MORTON SYSTEM RECEIVE THE BENEFIT OF OUR 35 YEARS EXPERIENCE IN BUILDING DYEING MACHINERY AND ALSO THE MANY PATENTED FEATURES ON OUR MACHINES.

•

Two additional patents issued March 4, 1940., covering our machines.

•

Manufactured by

MORTON MACHINE WORKS

COLUMBUS, GA.

L. F. Dommerich & Company

Executive and General Offices

271 MADISON AVENUE
NEW YORK, N. Y.

Telephone: AShland 4-8650

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For Manufacturers and Merchants

Inquiries as to our services solicited

ESTABLISHED 1840

Basically different Principle means . . .

LESS WEAR
LESS MAINTENANCE
LONGER LIFE

The Westinghouse Hermetically-sealed Unit

. . . the HEART of every "TEMPERED COLD" WATER COOLER

. . . reduces maintenance costs by eliminating (1) Belts (2) Pulleys (3) Gaskets (4) Shaft Seals (5) Commutator Brushes.

Fewer parts to wear. Even these parts operate in a permanent supply of oil. No oiling necessary. Built-in Watchman prevents costly motor burnouts. All this means EXTRA years of trouble-free performance.

MAINTENANCE COSTS DIVE

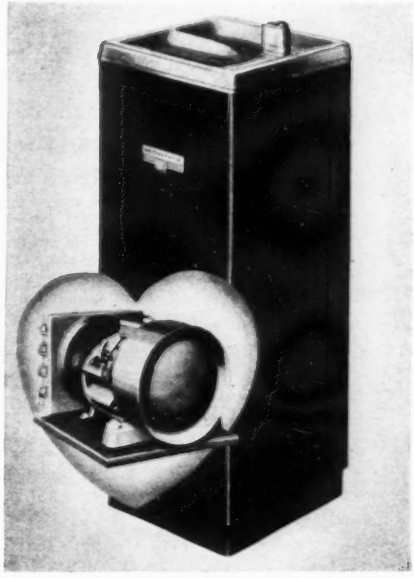
. . . with the PERMANENT COST CONTROL PLAN

Save money and protect your savings with Westinghouse coolers and this revolutionary 3-point plan:

1 Standard one-year free replacement warranty on unit and cabinet.

2 During the next four years, if the Hermetically-sealed Unit should fail, Westinghouse replaces it without charge—and pays all transportation and labor costs.

3 After 5 years, if and when the Hermetically-sealed Unit should fail, Westinghouse will replace it on an equitable exchange basis. The exchange unit carries four years' replacement protection with all the features of the second part of the plan.



Exclusive "PLUS VALUE" Features

Non-Clog Drain • Stainless Steel Top • Special Capacity Booster • High Efficiency Cooling Chamber • Built-in Watchman • Hermetically-sealed Unit.

Westinghouse "Tempered Cold" WATER COOLERS
"Build Friendly Relations"

Westinghouse Section 82, 653 Page Blvd., Springfield, Massachusetts

Please send complete details on Westinghouse "Tempered Cold" Water Coolers and the Permanent Cost Control Plan.

Name .....

Address .....

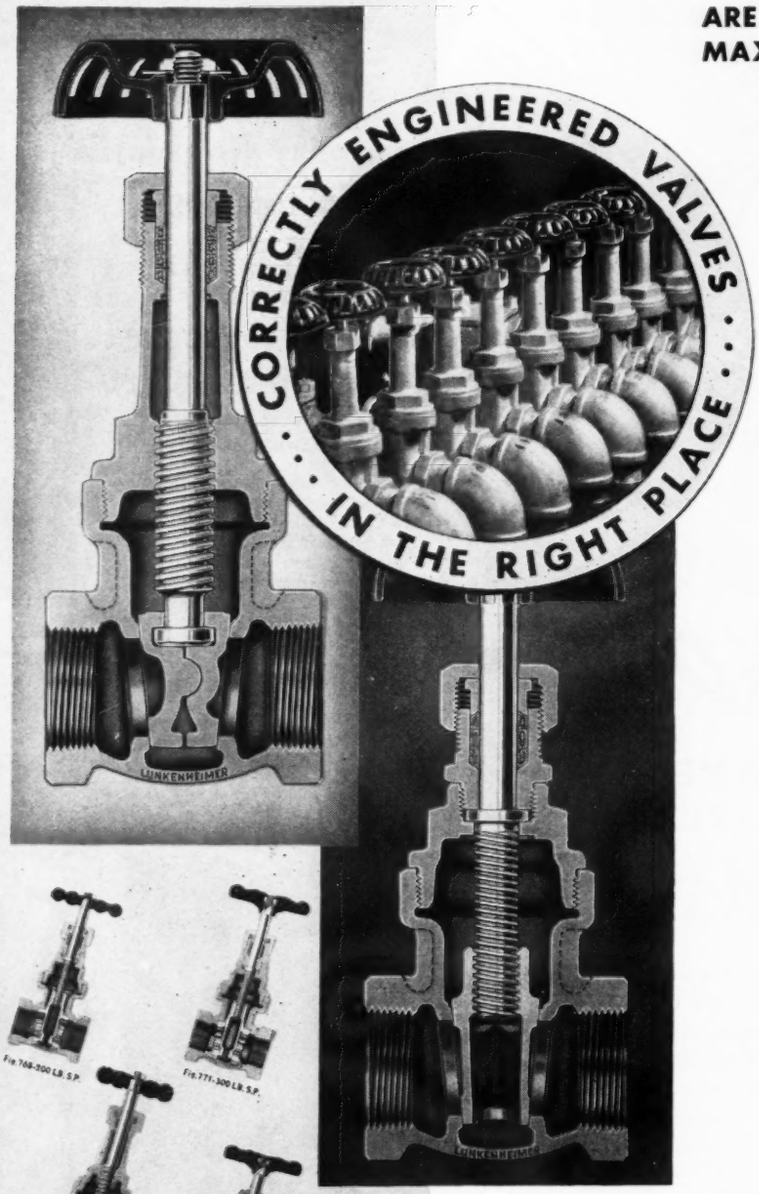
City ..... State .....

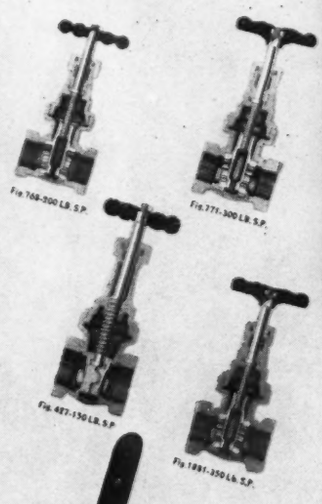
NO. 2 OF A SERIES

Designed with extra strength where needed, interchangeable parts, plus other features that save servicing time . . . . . .

LUNKENHEIMER *BRONZE GATE VALVES*

ARE "CORRECTLY ENGINEERED" FOR MAXIMUM ECONOMY ON THE JOB!





From handwheel to pipe threads, there are at least a dozen places to look for convincing evidence that LUNKENHEIMER BRONZE GATE VALVES first, give you more for your valve buying dollar . . . and then save you more on your valve maintenance dollar. Such features as unusually heavy body and bonnet construction, more powerful and accurately machined stem threads, exceptionally sturdy bonnet collar, extra deep stuffing boxes . . . these all combine to guard against failure at points where experience has shown that trouble is most likely to occur. Being an assembled job, with all units produced on a precision basis, any given part can readily be replaced from stock with full assurance of a perfect fit. Even comparatively small details, like beveled disc guides, to facilitate servicing, and the unique stem seat in bonnet, to permit repacking with valve wide open, play a part in the all-over economy of these quality products. You owe it to the profit side of your ledger to investigate the substantially greater value to be found in this line of "correctly engineered" bronze gate valves.

SEEING IS BELIEVING!

Naturally there are basic Lunkenheimer qualities, such as finer materials, continuous metallurgical research, painstaking manufacturing and testing processes, which cannot be seen in the products themselves. We do believe, however, that the purely visible qualities of Lunkenheimer valves will prove conclusively that they are inherently better able to serve you profitably. Won't you, therefore, ask our distributor's salesman, on his next call, to take a Lunkenheimer valve apart and compare it part-for-part with whatever valve you are now using?

ESTABLISHED 1862

THE LUNKENHEIMER CO.

"QUALITY"

CINCINNATI, OHIO. U. S. A.

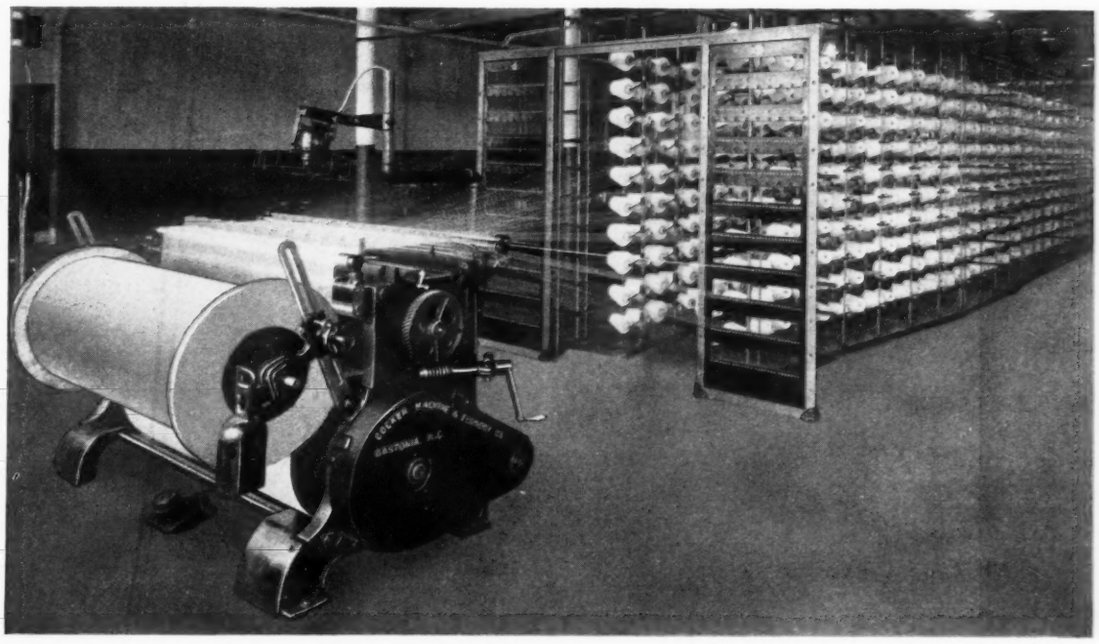
NEW YORK CHICAGO
BOSTON PHILADELPHIA

EXPORT DEPT. 318-322 HUDSON ST., NEW YORK

Send for copy of our new Catalog No. 78. We will include our handy "Guide", which makes selection easy by grouping valves, boiler mountings, and lubricating devices according to pressures, temperatures, and service applications.

LUNKENHEIMER

14-2A-19



Illustrated above is the COCKER HIGH SPEED SECTION BEAM WARPER equipped with Electrical Eyeboard Stop Motion and Magazine Cone Creel.

Mills using the Cocker High Speed Warpers as illustrated are saving in costs in Warping, Slashing and Weaving including labor, waste and floor space.

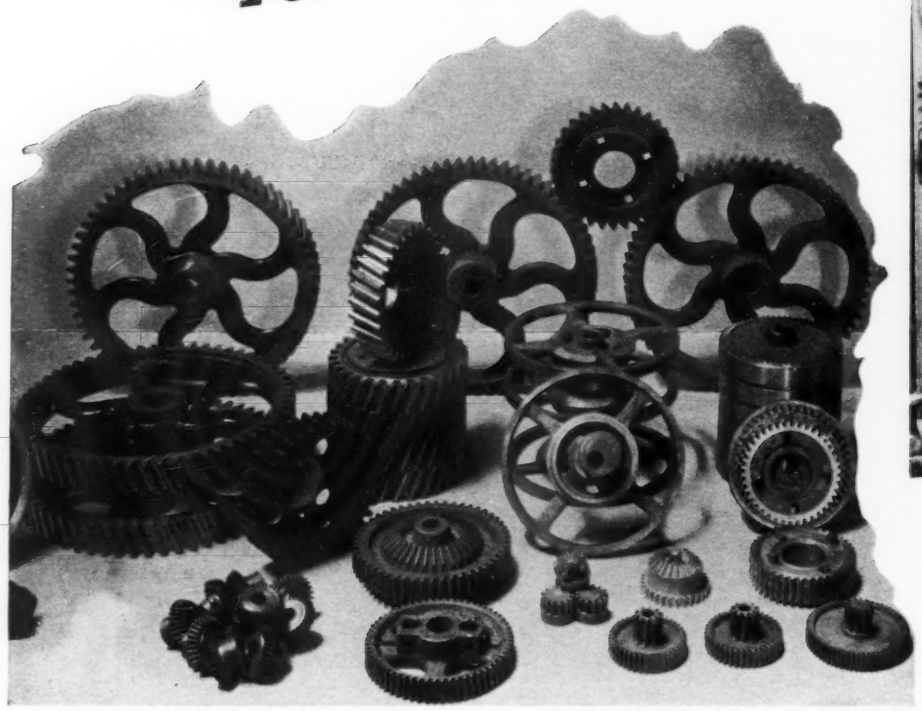
This is only one of the many Standard types of machines we build for making Profitable Warps.

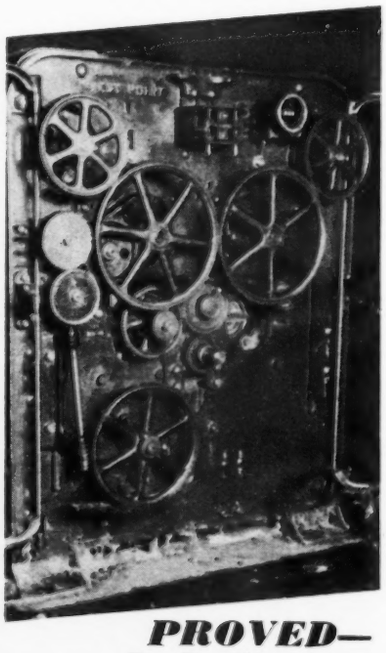
Write or wire us for further details.

COCKER
MACHINE & FOUNDRY COMPANY
Gastonia, N. C.

Designers and Manufacturers of complete Warp Preparation Equipment for Cotton, Spun Rayon and Rayon yarns.

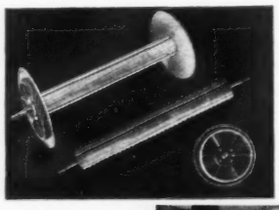
GEARS
For Textile Machinery





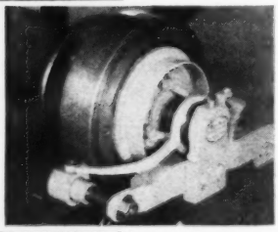
PROVED—
By Performance

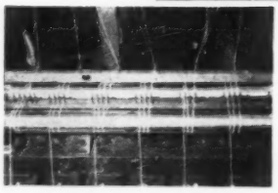
Other WEST POINT Products



LOOM BEAMS AND BEAM-HEADS . . . West Point loom beams and beam-heads are superior in their operation and economy.

ENERGY LOOM DRIVE . . . makes possible higher production per loom per hour . . . provides smoother loom operation.





THE BACHMAN GUIDE . . . eliminates heavy top rollers. "Blow Outs" reduced about 90%. Permits increase in twister speed.

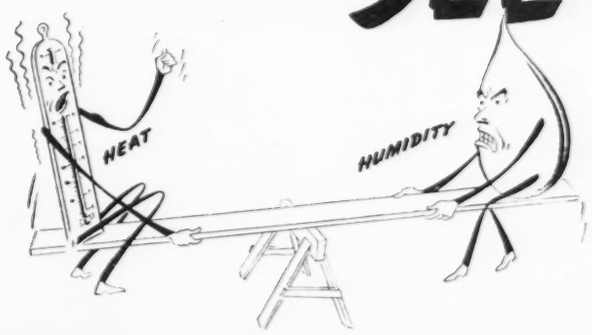
SPUR ... BEVEL ... HELICAL ... INTERNAL ... HERRINGBONE ... WORM GEARS ... WORMS ... RATCHETS ... ROLLER CHAIN SPROCKETS ... SILENT CHAIN SPROCKETS ... with cast or cut teeth...from cast iron, steel, and bronze.

Our organization maintains equipment and machinery for cutting all types and kinds of gears for the textile industry. These facilities enable us to produce gears at reasonable prices. Long services have proved their durability and dependability. Our extensive equipment enables us to render quick service.

Also manufacturers of special textile machinery, cloth room machinery and textile repair parts.

WEST POINT FOUNDRY & MACHINE CO.
(Batson-Cook Company, Owners)
WEST POINT, GEORGIA

NOW THEY'RE OFF THE SEE-SAW



HERE'S WHAT

Sturtevant Air Conditioning brought to this mill . . .

1 closer control of temperature and humidity.

2 elimination of frequent loom adjustments.

3 saving of 20 to 25% in steam for heating.

4 more uniform heating.

5 increased efficiency of workers.

6 cleanliness of air.

How "wobbly" temperature and humidity conditions were ended by Carl Stohn Inc.—with many money-saving results

Here—in the East Taunton, Mass. mills of Carl Stohn, Inc.—close control of temperature and humidity is vital! For if heat and moisture "see-saw", frequent adjustments to the heads of their Jacquard looms are necessary. Strength and elasticity of the yarn vary, too. That's why the Carl Stohn mill—producers of high quality rayon and silk brocades—reports that *"before* installing our Sturtevant Air Conditioning System, changes to the head and harness adjustments had to be made *continuously!"*

But now how different the story is! Humidity and temperature stay constant . . . even during the dog days of summer. No more frequent loom adjustments. Loom fixers are free to look after the maintenance of the looms now. Down went "seconds" caused by sticking harnesses. These are just some of the advantages of the Sturtevant Plan 3 Air Conditioning Installation at Carl Stohn Mills!

You, too, can have these money-and-time-saving benefits of Sturtevant Air Conditioning. For whether you want a complete central system, or merely an air circulating unit, one of the four Sturtevant Plans outlined below will meet your requirements . . . *and* fit your pocketbook. Why not discuss *your* problem with one of our representatives. He will prove to be fully informed and eager to help you. Just get in touch with our nearest office below. Our 30 years of air conditioning engineering experience are at your service.

COOLING AND AIR CONDITIONING DIVISION • B. F. STURTEVANT COMPANY
Hyde Park, Boston, Mass. Atlanta Camden Chicago Greensboro Los Angeles New York

NOTE vertical risers, with specially designed air distributing head, which assure uniform air distribution. No overhead ducts to block the natural lighting system of this mill.

Sturtevant
REG. U.S. PAT. OFF.
Puts Air to Work

PLAN 1.

Vap-Air Units—An extremely low cost standardized unit for room cooling in conjunction with an existing humidifying system, supplying automatically controlled outside air. Easily installed by mill mechanics, it maintains even relative humidity at all times, prevents over-humidification, insures uniform distribution of air. All under automatic control.

PLAN 2.

Vap-Air Blender Units Plus Your Head System—A carefully engineered low cost system which provides a *guaranteed* summer temperature reduction. Installation under the supervision of Sturtevant experts includes revision of present humidifying system so as to provide desired degree of temperature reduction most efficiently. All under automatic control.

PLAN 3.

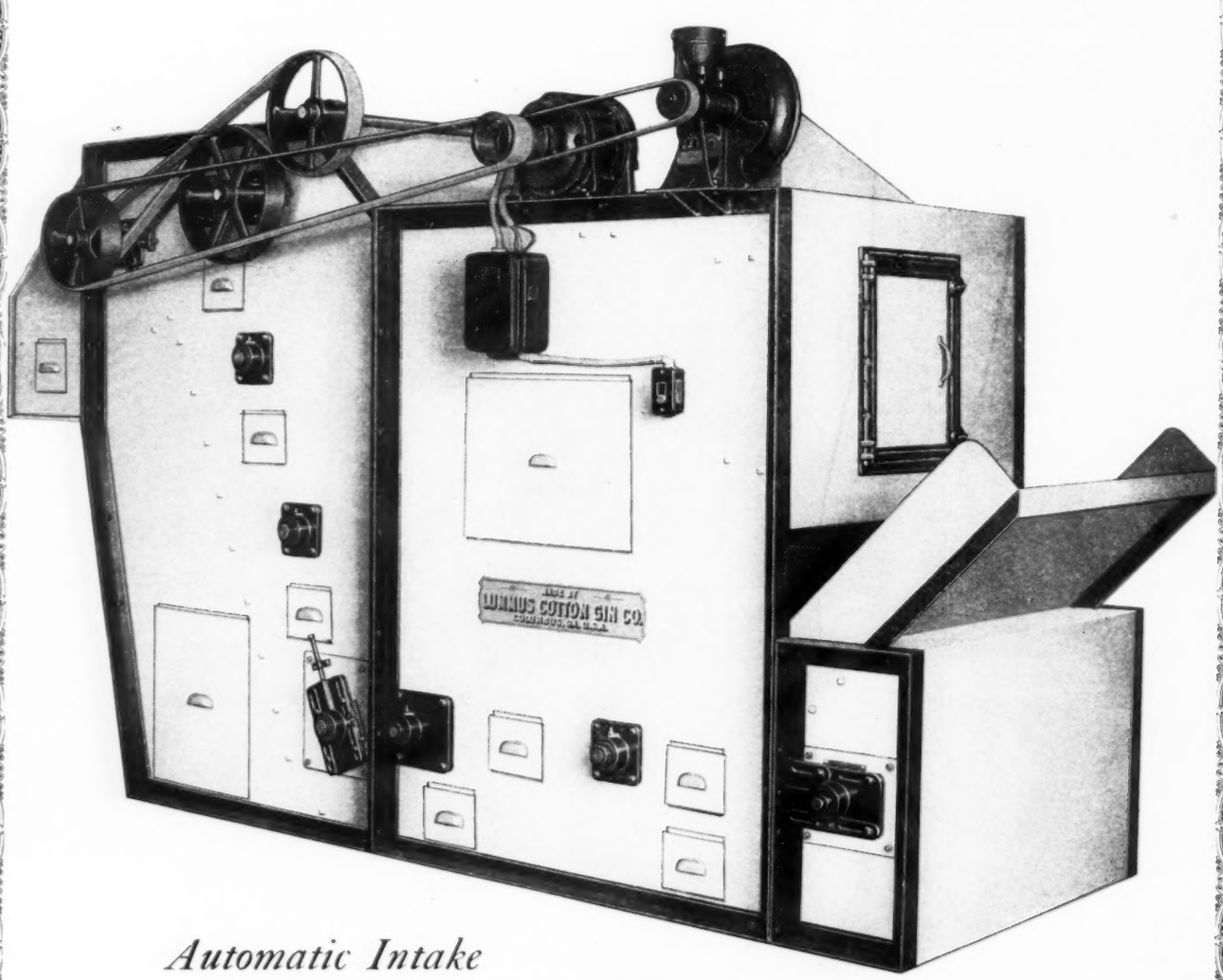
Sturtevant Textile Evaporative Cooler and Humidifier System—A "tailor-made" system, completely installed, of either several unit systems, or one large system. Provides lowest possible temperature obtainable without use of refrigeration. All under automatic control.

PLAN 4.

Sturtevant Textile Evaporative Cooler and Humidifier System Combined with Supplementary Head System—Essentially the same as Plan 3 but adapted for rooms requiring relative humidity above 65%. All under automatic control.

COOLING & HUMIDIFICATION TO FIT YOUR POCKETBOOK

THE LUMMUS BLENDING FEEDER

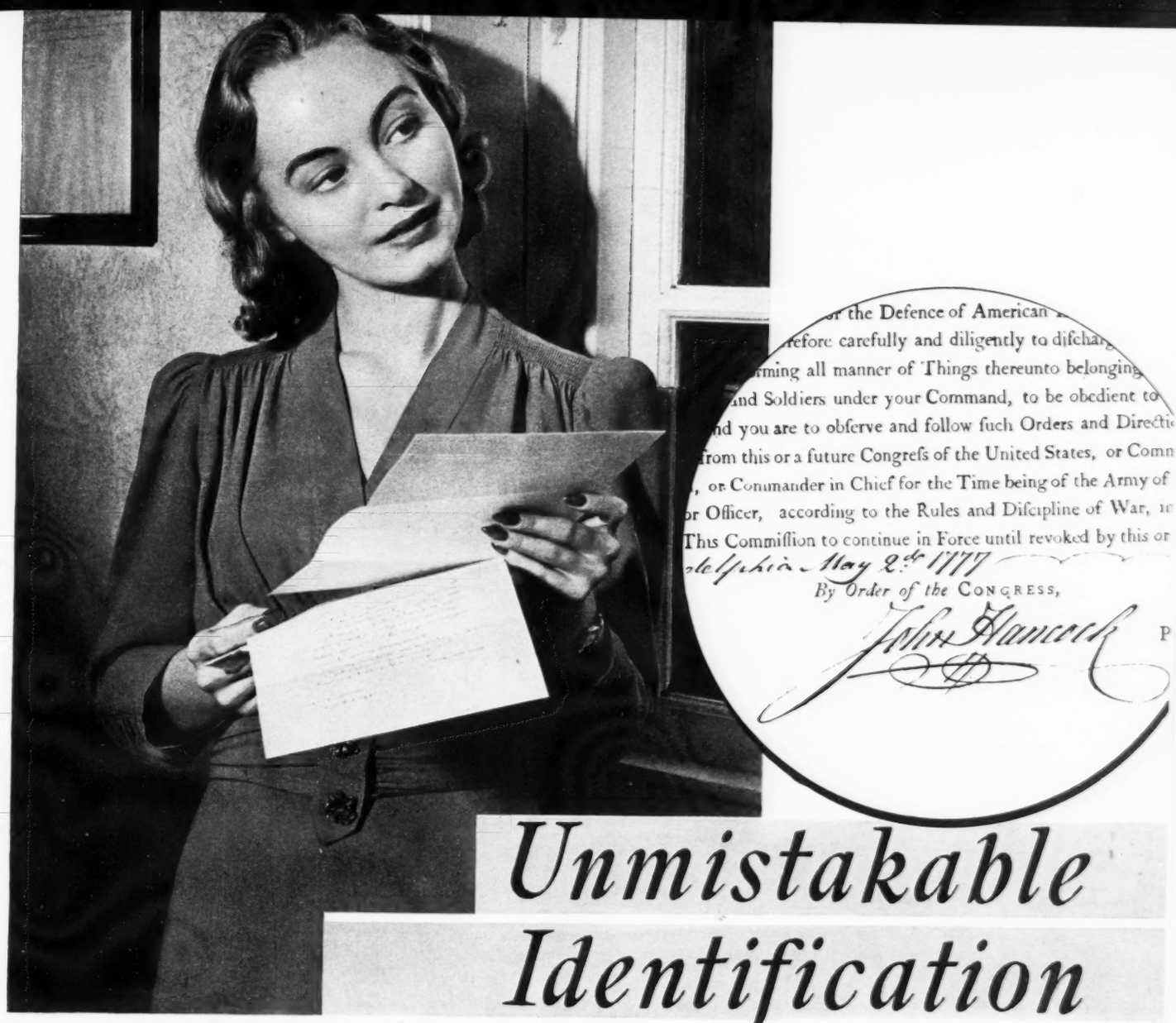


Automatic Intake
Cannot be Overfilled
Improved Cleaning Grids
Individual Motor and Dust Fan
All Ball Bearing Throughout

Sold by

AldricH MachinE

Greenwood, **WorkS** South Carolina


the Defence of American
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, or Commander in Chief for the Time being of the Army of
or Officer, according to the Rules and Difcipline of War, in
This Commiffion to continue in Force until revoked by this or
By Order of the CONGRESS,
John Hancock

Unmistakable Identification

ONE signature, the first on our Declaration of Independence, is so famous it has become the name for *all* signatures. That's the goal every manufacturer sets for the name of his product. Why is that signature so famous? Because it's good-looking, legible and at the right place! Kaumagraph* Dry Transfers, Prestomarks, Embossed Seals and Lithographed Packing all work together to present *your* name—good-looking, legible and at the right place.

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Kaumagraphs" are made only by Kaumagraph Company

KAUMAGRAPH **DRY TRANSFERS**

General Offices and Plant, Wilmington, Delaware • Representatives in Principal Textile Centers of the World

RAPIDASE

It's not the price per pound that counts! It's the cost of desizing material actually used, minus the savings which it effects in simplifying other processes, that determines the cost of preparing cloth.

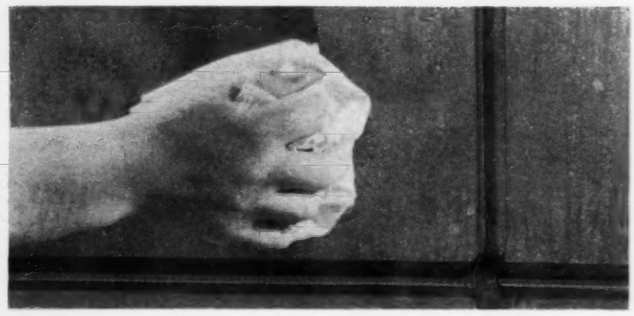
The proper use of Rapidase reduces and often eliminates subsequent boiling and scouring operations, with consequent savings in time, machine expense and materials.

Rapidase is readily adaptable for the desizing of cotton, rayon and mixed goods because it acts rapidly, efficiently and consistently over a wide range of temperatures.

WALLERSTEIN COMPANY, INC., 180 Madison Avenue, New York City

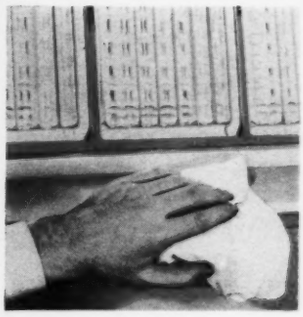
"We cured 4 headaches in the mill

with this one material"



"YOU KNOW HOW MOIST AND WARM it always is in this room. Before we had glass blocks the windows sweated so badly that the dripping moisture rotted the sash. Besides, the condensation made it hard to control humidity in here, especially in cool weather.

"WE ANSWERED BOTH PROBLEMS with PC Glass Blocks. There's no sash to corrode, for the entire panel is made of materials that acid moisture can't harm—glass and cement. And there's far less condensation because PC Glass Blocks are such a good insulating material.



"THE LESS DIRT infiltration we have, the less rejects we're troubled with—another reason we used glass blocks. Glass block panels let in a lot of light, but not a speck of dirt. They're sealed up tight on all sides. Look, I can wipe this sill without soiling my handkerchief.

"THOSE BIG PANELS of glass blocks make the plant bright and cheerful. They give us a lot of natural daylight that is so important for color matching. I'm convinced that the men do better work and are less tired at the end of the day when they work in good light like this."

IF temperature and humidity control, condensation, cleanliness or daylighting are problems in your plant, why not find out what PC Glass Blocks can do for you? In many plants they are helping to correct production troubles and to reduce maintenance costs. They're not just modern in appearance—they're modern in their efficiency and practicability as well. It won't cost you anything to find out how PC Glass Blocks will help make your plant more efficient.

Before you make any plans for new construction or remodeling, send for our big, FREE book on PC Glass Blocks. Full of pictures of actual installations in many types of buildings—with valuable facts that will show you how glass blocks will help your plant operation.

PITTSBURGH PC CORNING

"PITTSBURGH" stands for Quality Glass

GLASS BLOCKS

Distributed by

PITTSBURGH PLATE GLASS COMPANY

and by W. P. Fuller & Co. on the Pacific Coast

Pittsburgh Corning Corporation
2133 Grant Building, Pittsburgh, Pa.

Please send me, without obligation, your new book of facts about PC Glass Blocks.

Name_____

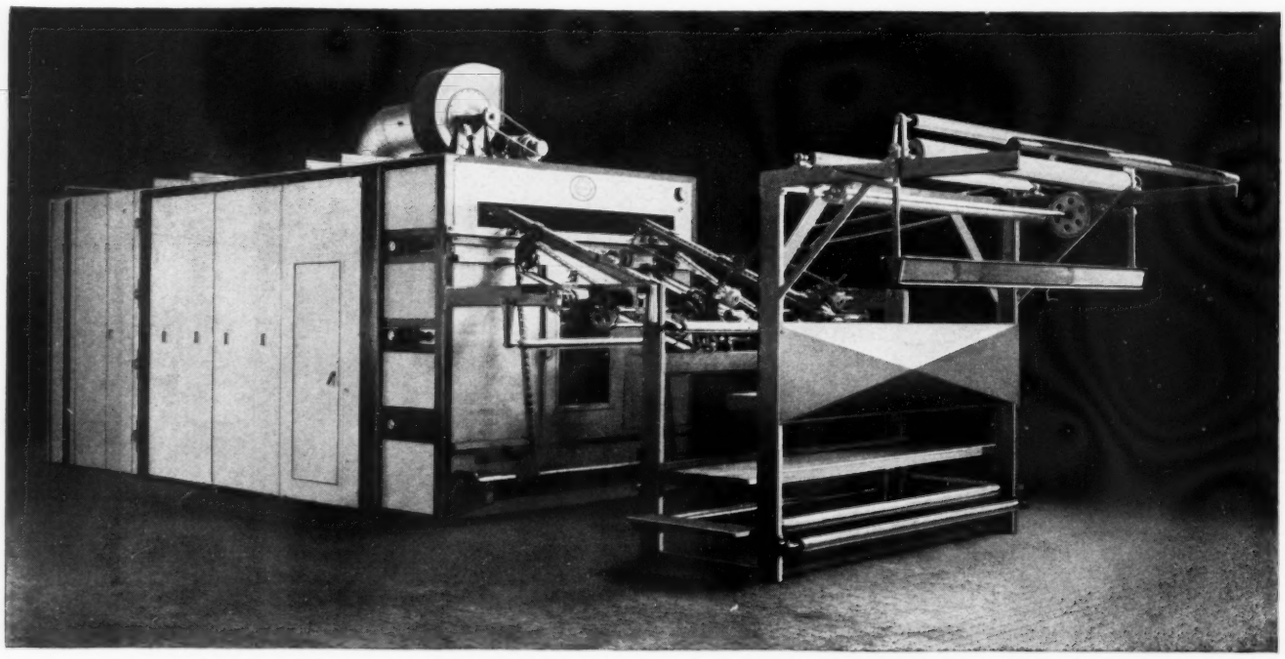
Street_____

City_____ State_____

NOW—A New Standard of Tenter Performance that means New Profits *for you!*

JAMES HUNTER MACHINE CO. Hunter NORTH ADAMS MASS.

New Hunter Uni-Flow Tenter Affords Cloth Speeds on 16 Ounce up to 38 Yards per Minute in 12 Linear Feet for the Drying Chamber



Hunter announces the new Uni-Flow return bend tenter—the latest addition to the long Hunter record of achievement in cloth drying—a record unequalled by any other tenter manufacturer.

Developed in the closing months of 1939 after months of testing, the new Hunter Uni-Flow is setting production records unlikely to be challenged. The Uni-Flow Tenter, for example:

(a) Tenters 16 oz. woolens or worsteds at 38 yards per minute in 12 linear feet of floor space for the drying chamber with less than 12 HP.

(b) Guarantees most efficient known use of heat and air.

(c) Affords one man operation at highest speeds with completely automatic safety features.

(d) Will dry three times as much cloth as most old tenters in one-third the floor space.

(e) Comes complete with all motors, starters, limit switches, automatic guiders, selvage openers, lint screens, automatic temperature and speed controls . . . the user need only wire motors and bring steam lines to the machine.

For complete details on this radically different Uni-Flow Tenter and actual production records on wide varieties of cloth write

JAMES HUNTER MACHINE COMPANY

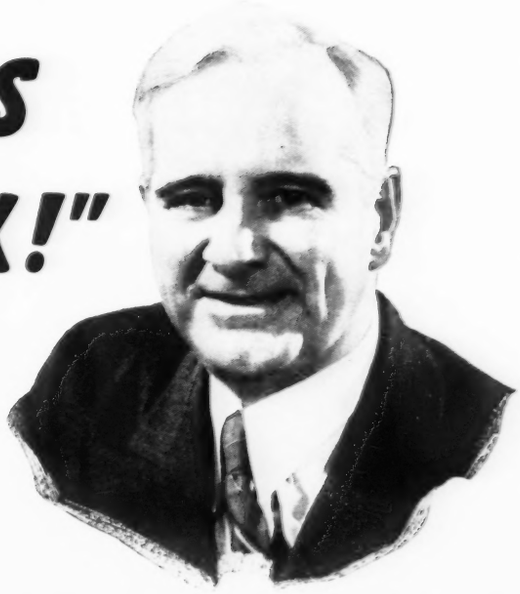
FOUNDED 1847 **NORTH ADAMS, MASSACHUSETTS**

Southern Agent: CAROLINA SPECIALTY CO., Charlotte, N. C.

Western Representative: E. G. PAULES, 343 Bendix Bldg., 1206 Maple St., Los Angeles, Cal.

"I SAVE DOLLARS BY USING DULUX!"

REG. U. S. PAT. OFF.



New Du Pont DULUX High-Hiding Mill White Makes One-Coat Jobs Possible

Fast Application

● DULUX High-Hiding Mill White goes on fast. With one-coat jobs frequently possible, it means the work is completed much quicker than when several coats are needed. In addition, DULUX has extremely easy working qualities that speed the job even more.

Intense Hiding—Excellent Spreading Rate

● Du Pont chemists have developed a method of *increasing the concentration of high-hiding pigment particles in suspension . . . while maintaining an unusually good spreading rate.* This stepped-up hiding is so intense that DULUX often does the job with only one coat.

THE new Du Pont High-Hiding Mill White offers plant operators a combination of advantages which we have seen in no other mill white. It frequently does the job with *only one coat!*

DULUX High-Hiding Mill White offers brilliant whiteness, speed of application, intense hiding combined with excellent spread per gallon. Its intense hiding plus its speed of application means lower cost at the start—in labor and material needed. Its durability, its whiteness retention mean a longer time between repaintings. You save at the start, and you save in the long run.

If you'd like full information about this new mill white, a Du Pont Maintenance Engineer will be glad to demonstrate its outstanding advantages in your own plant. Or write to E. I. du Pont de Nemours & Co. (Inc.), Finishes Division, Wilmington, Delaware.

TUNE IN: "Cavalcade of America" Tues., 9 p. m., E. D. S. T., NBC networks.

DU PONT

DULUX

REG. U. S. PAT. OFF.

HIGH-HIDING MILL WHITE

E. I. du Pont de Nemours & Co. (Inc.), Dept. C-50
Finishes Division, Wilmington, Delaware

Please see that I get complete information about DULUX High-Hiding Mill White—and your new booklet.

Name .....

Address .....

City ..... *State* .....

UNBRAKO

SELF-LOCKING
HOLLOW
SET SCREWS
with the Knurled Points

Extra Protection
for textile machinery

Fig. 1641
Pats. Pend.

. . . protection that insures savings in maintenance dollars, freedom from accidents and breakdowns. For once set up with no more than ordinary pressure, these screws automatically lock into place with a grip that just can't let go no matter how bad the vibration. Yet adjustment is easy, and "Unbrako" Self-Locking Hollow Set Screws can be re-used indefinitely—always with the same dependable effectiveness.

Such unfailing advantages can't help but provide trouble-free operation where ordinary set screws may not be reliable. It pays to play safe by specifying "Unbrako" Self-Lockers.

Write for
Catalogs and Samples

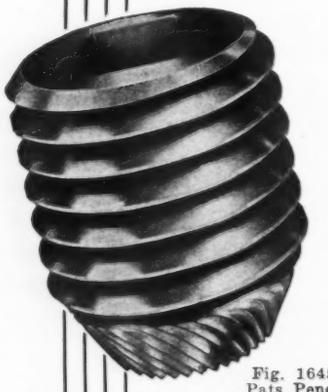


Fig. 1645
Pats. Pend.

UNBRAKO Square Head Self-Locking Set Screws

have the same automatic locking features that result in dependable, trouble-free operation of your machinery. Use them wherever a square head set screw is subject to vibration.

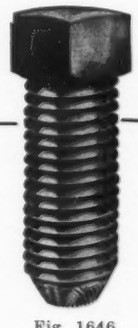


Fig. 1646
Pats. Pend.

STANDARD PRESSED STEEL CO.

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BOX 582

BRANCHES
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SAN FRANCISCO

Their ever increasing use—after half a century's service in the lubrication and protection of textile machinery—is stronger evidence of the quality and dependability of STANDARD OIL LUBRICANTS than any laboratory test or individual testimonial we might offer...Time is an exhaustive testing-agent.

STANDARD OIL COMPANY

INCORPORATED IN KENTUCKY

Run

U.S. RING TRAVELER CO.

UNIVERSAL RING

BOWEN ROUND POINT TRAVELERS
BOWEN SQUARE POINT TRAVELERS
BOWEN IMPROVED VERTICAL BRONZE
BOWEN PATENTED BEVEL EDGE
BOWEN PATENTED NE-BOW VERTICAL
BOWEN PATENTED VERTICAL OFFSET
BOWEN FLAT OVAL AND ROUND WIRE TRAVELERS

COMPLETE U. S. RING TRAVELER SERVICE GIVES YOU GREATER ULTIMATE PROFIT

Uniformity is the key to successful spinning and twisting of all fibres, and there must be uniformity in ring travelers to retain the tension required for uniform density of bobbins, which in turn spells uniform quality of product—which in turn means better production, less waste—and ultimately more profits for you.

Quality is the background for U. S. Ring Travelers. Only materials of the highest quality steel and bronze alloys are used in their manufacture. The most modern machine tools contribute to uniformity of weight and shape. Electrically controlled equipment insures proper and uniform temper in the treatment of each particular metal.

All of this insures you a uniform output. Properly used in the spinning or twisting of cotton, wool, worsted, asbestos and spun silk in the throwing of silk and rayon, these travelers will contribute, more than any other single factor, to a quality product. Look at the ring travelers below—

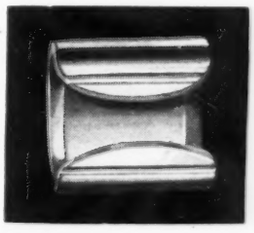
This sealed Metal Shipping Container protects you. On a par with the high quality of U. S. products is the care we take to see that they reach you in perfect condition.

NE-BOW *Patented* VERTICAL RING TRAVELERS

Developed to meet the particular needs of the silk and rayon trade in the process of throwing, due to the recent adoption of the vertical ring, particularly of the lubricating type. By eliminating the pivoting action of the traveler, the traveler is at all times kept in close contact with the groove or device for lubricating the ring and assists in drawing therefrom the lubricant, distributing the same evenly over the entire inner surface of the ring; promoting a longer life to the traveler and a more even twist.

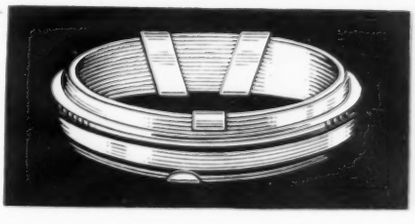
BOWEN *Patented* BEVEL EDGE TRAVELERS

The Bowen Patented Bevel Edge feature of U. S. Ring Travelers produces ideally smooth, even yarn. There are no angular edges to flatten the end. There are no split ends in throwing rayon and silks—no fly waste in the spinning and twisting of cotton, wool, worsted, asbestos, kindred fibres. Made and stocked in all sizes and weights, for all kinds and counts of yarns.



BOWEN *Patented* VERTICAL OFFSET TRAVELERS

After exhaustive tests under actual running conditions, the Bowen Patented Vertical Offset Traveler has proved its worth in the twisting of cords and plys. Based on the true mechanical principle of taking a diagonal position with relation to the ring, presenting a bearing surface over the full width of the Traveler. This design prevents gripping or binding—gives an even tension—an evener rounded product—longer life to the traveler.



U. S. RING TRAVELER CO.

PROVIDENCE, R. I. **GREENVILLE, S. C.**

AMOS M. BOWEN, Pres. and Treas.

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STANDARD TRAVELERS

How'd you like to have

"MY PRIVATE SECRETARY"?

YOU can secure from COTTON a valuable and efficient secretary (though not quite as attractive as the one pictured above), in the form of a valuable book which is being widely acclaimed by textile men.

A long felt need of practically all textile executives and supervisors is filled in this new book "My Private Secretary," just produced by COTTON. This book, compiled by F. Gordon Cobb, contains a comprehensive set of mill calculations, constants, tables, etc., for which the mill man will find constant use, but its unique and striking feature is a section of forms, so designed that, when filled in by the user, will provide, in one pocket-size volume, a complete record of a man's mill or department, so that he can readily answer practically any question about his job.

Practically all textile men have much useful information which they wish to record, but, too frequently, one memorandum is left at the desk, another is at home, others cannot be located. "My Private Secretary" was designed to provide in one handy volume all of this desirable information, along with useful rules, tables, etc. The specially prepared forms are so designed that comparable records of several plants may be recorded, or these spaces used to indicate changes from one year to the next for a single plant.

Among the rules and information which the book, filled in, will contain, are the following:

1. The draft of any machine in the mill.
2. An easy way to figure all drafts for every machine in the mill.
3. A short method for obtaining the production of any machine in the mill.
4. The speed of any machine or part of any machine, such as r.p.m. of beaters, r.p.m. of card cylinders, card doffers, r.p.m. of front rolls, spindles, loom speeds, etc.
5. The twist gear, draft gear or lay gear on any of your machines.
6. How much roving or yarn there is on any bobbin, spool or beam.
7. The specifications of the different machines, such as the number of spindles and gauge, kind of machine, weight of product, etc.
8. The standard and actual twist, lays per inch, production and weight of all yarns compared.
9. A simple method of obtaining the actual number of yarns needed to produce a style of goods.
10. A quick method of getting loom production.
11. A quick method of getting spinning production or hanks.
12. A quick method of getting speeder, intermediate or slubber production.
13. How to calculate the yarn space in the reeds you buy.
14. All information necessary to take stock.

"COTTON", Grant Bldg., Atlanta, Ga. 5-40

I want to get **"MY PRIVATE SECRETARY."** Please enter my subscription to **COTTON** for 3 years and send me copy of this book.

Enclosed find—☐ $3.00 United States—☐ $4.50 Canada—☐ $6.00 Foreign.

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Street & No. _____

City _____ State _____

If an individual give name of mill connected with and position held.

Name of Mill _____

Position _____

"My Private Secretary," in a durable cover, printed in gold, contains 112 pages. It is 4 by 7 inches and fits readily into a coat or trouser pocket. You can secure it together with a 3-year subscription to COTTON. If you are already a subscriber, expiration date of your subscription will be advanced 3 years. Fill in and mail the coupon today.

INDANTHRENS
are permanent
BRILLIANT COLORS... SHARP, CLEAR, SPARKLING PRINTS. FAST TO SUN-LIGHT, WASHING AND CROCKING. FOR LASTING BEAUTY OF COLOR USE INDANTHRENS... GDC
INDANTHRENS ARE A COMPLETE RANGE OF COLORS THAT ARE SUNFAST, WASHFAST, AND FAST TO CROCKING.
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Boston, Mass.
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Philadelphia, Pa.
Chicago, Ill.
Charlotte, N. C.
San Francisco, Cal.

"I want Easy Roll MonoRail!"

"You mean American?"

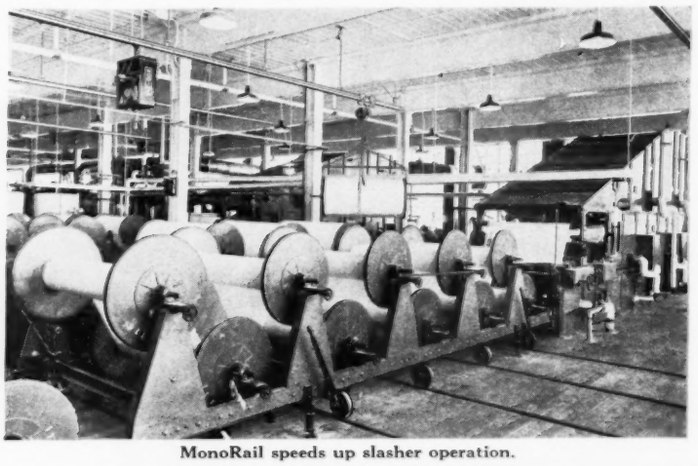
"Sure, that's it! The track we put up the other day—the gang in the shop says the trolleys are so easy to push."

"That's right! I saw the first guy try it out. His load got away from him and rolled 30 feet down the track before it stopped. I guess he was used to our old rail."

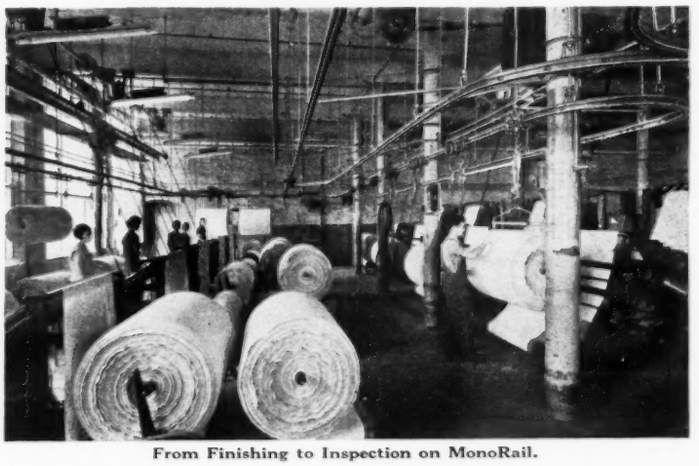
This actually happened in a large automotive plant where they originally installed their own overhead system. They now call for "Easy Roll" track, a name they coined after the above experience.

American MonoRail is "Easy Roll" because it's a high carbon, twin section rail, with overlapping splice to eliminate butt joints and a one piece forged hanger clamped in the rail head to prevent interference with trolleys. Trolleys "Roll Easy" because they contain precision bearings.

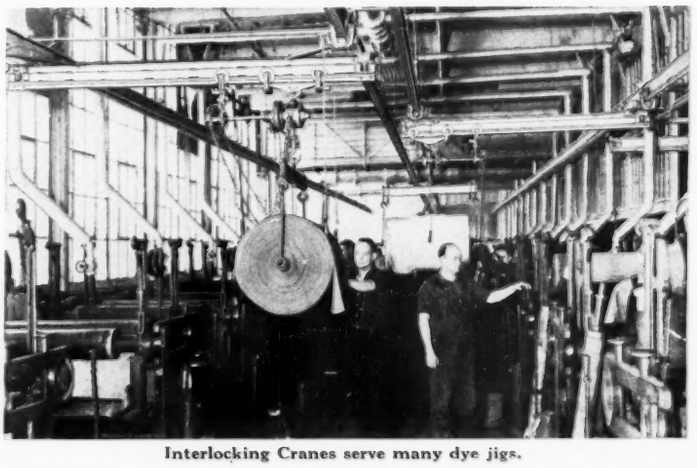
Let an American MonoRail engineer show you these features and explain the cost saving advantages of specialized overhead handling equipment.



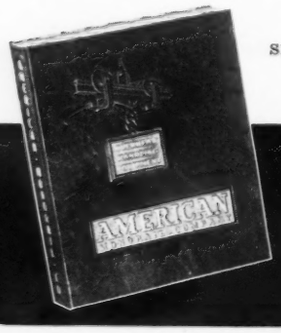
MonoRail speeds up slasher operation.



From Finishing to Inspection on MonoRail.



Interlocking Cranes serve many dye jigs.



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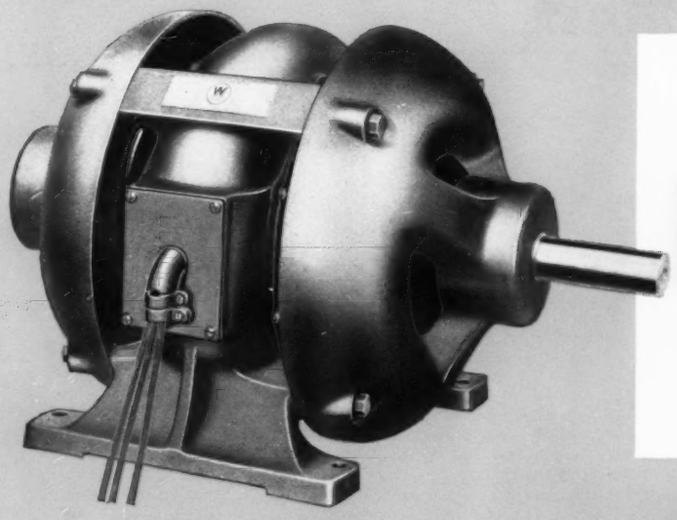
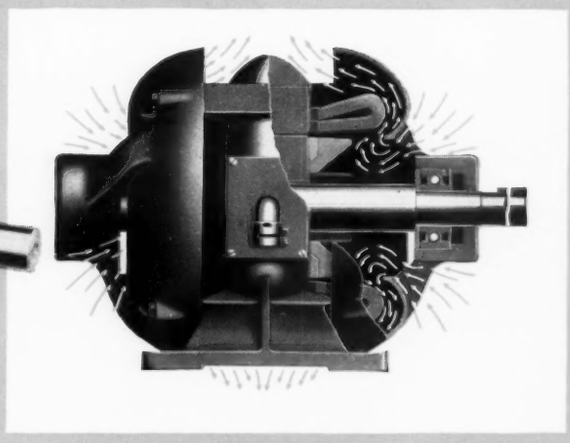
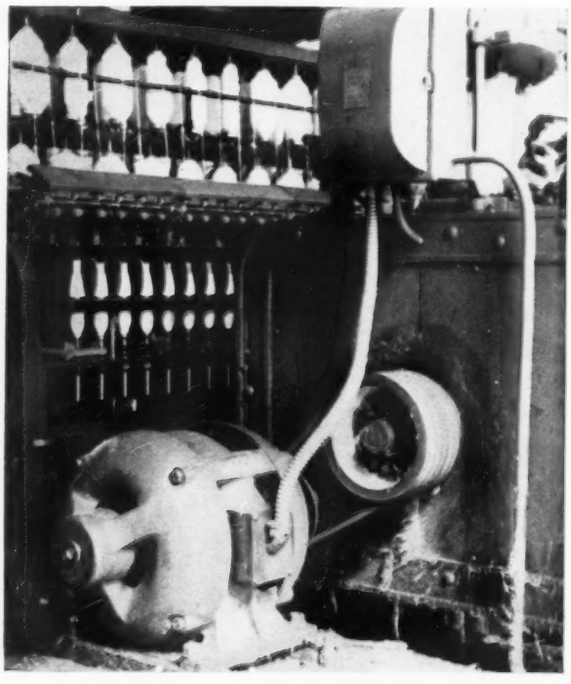




A NEW *Lint-Free* WESTINGHOUSE MOTOR



Here's a motor lint won't smother! It's lint-free — a motor designed and built exclusively for individually driven textile machines — a motor that will *keep* machines running and requires an absolute minimum of care because —

IT GIVES THESE ADVANTAGES:

- Unobstructed Air Path
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Plus

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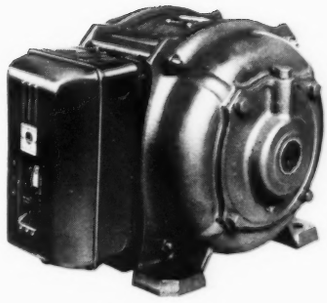
KEEPS MAINTENANCE COSTS DOWN

new WESTINGHOUSE LOOM SWITCH

THE "DE-ION" MOTOR WATCHMAN



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- "De-ion" Arc Quenchers prevent dangerous flashovers, protect contacts from burning, reduce maintenance costs.
- Toggle switch clearly indicates On, Off, or Tripped positions.
- Lifetime calibration of bi-metal overload protector. Snap-action disc protects motor from overload, regardless of the number of times it is called upon to function.

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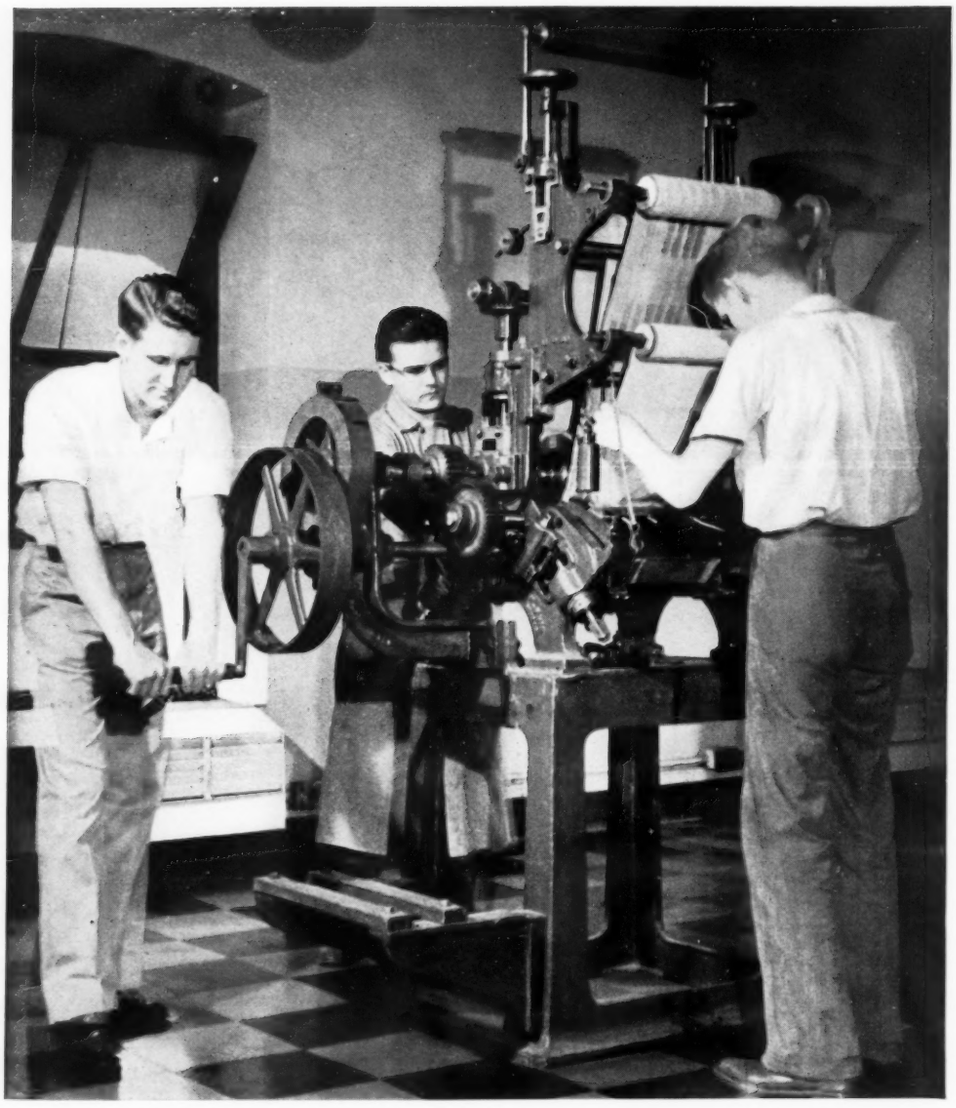
Westinghouse Loom Switch



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SHORTS AND REMNANTS

How Long is One Inch Cotton?

The article "How Long is One Inch Cotton?" by E. H. Helliwell of Pequot Mills which appeared in the February issue of COTTON has aroused a great deal of interest. We quote from a few of the letters which we have recently received with reference to the article:

"We read with interest Mr. Helliwell's article and were particularly interested in the mechanical staple sorter described in his article. We wonder if you can give us any information which would enable us to get in touch with the manufacturers of this device with the view to purchasing one."

H. G. ZEHR

Bemis Brothers Bag Co.
Talladega, Ala.

"• • • This prob'em of how to obtain fiber arrays rapidly and yet measurable with some accuracy has often bothered me but I have been unable to see any merit in the mechanical sorters I have seen. May I ask, therefore, if it is possible for you to send me a description of the instrument or the name of the manufacturer, if it is commercially available?"

LEWIS LARRICK

The B. F. Goodrich Company
Akron, Ohio.

"• • •From the information given in the article we believe this equipment would be of interest to us, and we would like to secure further information regarding the manufacturer. Would you please let us know who makes this equipment?"

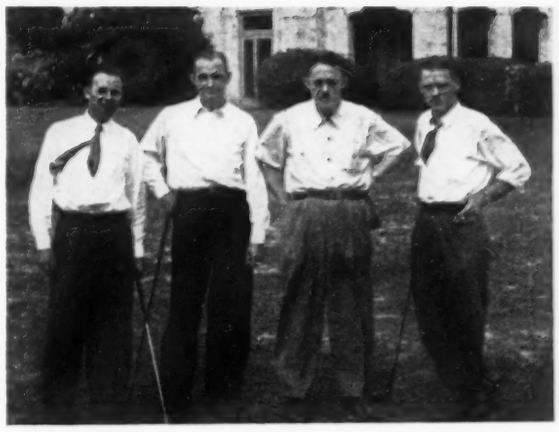
C. E. BACHELDER

Superintendent
Tennessee Eastman Corp.
Kingsport, Tenn.

Similar letters were also received from G. R. HODGIN, Enterprise Manufacturing Company, Coleridge, N. C.; A. Y. CROWLEY, JR., Georgia-Kincaid Mills, Griffin, Ga.; C. J. WHITE, JR., chief engineer, Callaway Mills, LaGrange, Ga.; R. F. CRAIG, Stanley, N. C. and R. P. SWEENY, superintendent, Exposition Cotton Mills, Atlanta, Ga. Mr. Helliwell advises that this is his mill's own development and is not available commercially. He has been unable to find any local shop equipped to make them with sufficient precision. But understands there is a concern in Providence equipped to make them and he is contacting them in an effort to make an arrangement whereby they may be made and furnished commercially. Mr. Helliwell has also written us as follows:

"I was much pleased with the display of the article and I think your art and editorial departments did a fine job. It would be hard for you to realize the interest and comment this article has caused. I credit a lot of this to the pleasing manner in which it was presented. Before I had even received my copy of the magazine, I had received two telephone calls and one letter from mill men. Later I received a very complimentary comment from my Big Boss. Today's mail brought a request from the Department of Agriculture for two reprints to be put in the archives at Washington."

(If Mr. Helliwell is able to make arrangements to have his sorter manufactured for commercial distribution, we shall advise our readers through an announcement.)



This snapshot, made at the Mobile convention by **P. G. Wear**, shows, left to right: the new president of the Alabama Cotton Manufacturers Association, a loom salesman, a textile editor, and a mill manager—in other words, **Joe Lanier, Walter Mitchell, Bob Philip, and Homer Carter** . . .

◆

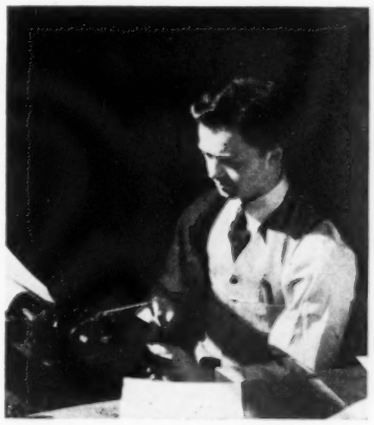
Likes "Private Secretary"

"This is the first time I have actually seen a copy of 'My Private Secretary' and frankly I feel that you deserve full marks. This is just the type of book which a mill man requires. The amount of information contained in it is enormous and what particularly pleases me is the way in which you have drawn up the forms for carrying the standard mill data."

R. M. FRASER

Fabrica de Argentina de Alpargatas
Buenos Aires, Argentina.

Meet "Cotton's" Staff (No. 4)



John C. Fonville has been a member of "Cotton's" editorial staff since January 1936. A native of Montgomery, Ala., he was graduated in textile engineering at Alabama Polytechnic Institute, Auburn, Ala., in 1933; is member of "Phi Psi" textile fraternity. After graduation, he toured Europe on a bicycle. Worked through all mill departments; was in weaving department of Lancaster plant of Springs Cotton Mills when he joined this magazine.

Married in 1937, has one child, John, Jr., who is 20 months old. On week-ends when there isn't a textile discussion meeting to report, he indulges in fishing and hunting, which he used to enjoy more frequently before joining the maelstrom of editorial activity. In those days he used to wonder how the editor of a monthly magazine kept busy with only one issue a month to produce. Ask him what he thinks about it now!

Thank You, Mr. Turner

The following is an excerpt from a letter written to Henry McCarn, Mount Holly, N. C. by James L. Turner, superintendent, Dominion Yarns, Limited, Welland, Ontario, Canada:

"All of the textile journals have made improvements within the last few years, but I think COTTON is just a little ahead of the rest. In the reports of the various textile meetings, COTTON seems to be a little more accurate. That is, the one who makes the reports seemed to be familiar with the subject and does not make so many mistakes. Every progressive mill has tried to keep modern in every respect, and this is where I find COTTON has been a very great help to me."

◆

Praise From Caesar

"Just a note to say to you that your last issue of COTTON (February) which I received Saturday and had time to review yesterday is mighty fine, in fact, one of the best. Congratulations!"

C. W. GADDY

Manager, Knitting Department,
Wiscassett Mills Co.
Albemarle, N. C.

◆

Modern Methods of Dyeing

"I should like to receive two copies of each of the articles by Dr. E. W. Pierce which appeared in COTTON from December 1938 through September 1939. Ordinarily I have access to all of my old copies but since most of these articles were written I have changed my place of business."

W. W. McLEOD

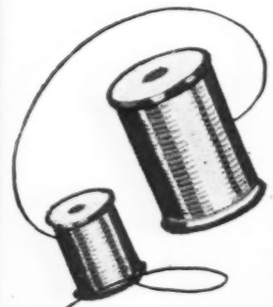
Agent,
The American Thread Co., Inc.
Fall River, Mass.

(The series of articles "Modern Methods of Dyeing" by Dr. Pierce, and the two subsequent articles on naphthols by Joseph Lindsay, Jr., which appeared in the November and December issues of COTTON are being reprinted in booklet form by the Ciba Company, Inc., P. O. Box 25, Station C, New York, N. Y.)

◆

See page 97 of this issue for important announcement on spun rayon.

NOW ...THE SAME OUTPUT with 25% less equipment!



"Fewer tubs necessary when they are ENDURO-lined," says the Chief Chemist of this large dye-shop

Here's another case where the *flexibility* of equipment made from ENDURO* Stainless Steel pays big dividends. Instead of the 80 tubs formerly required in this large dye-shop . . . only 60 now are necessary for the same amount of work. The 60, of course, are ENDURO-lined. This vast reduction in capital equipment is possible because ENDURO'S smooth, lustrous surface not only is resistant to all dye liquids, but it can be thoroughly cleaned merely by rinsing. Thus dark shades can follow light shades in the same tub . . . without any danger of "carryovers" causing spotting or discoloration. *No tubs need be set aside exclusively for certain colors!* Every tub can be kept busy every working day. Let us send you the complete facts on this installation; as well as on other textile equipment made from ENDURO. Write Republic, Dept. CO, at Cleveland. Republic Steel Corporation, General Offices: Cleveland, Ohio; Alloy Steel Division, Massillon, Ohio.

*Reg. U. S. Pat. Off.

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Vol. 104 May 1940 No. 5

An Industry--Community Builder

A Word Picture and Brief Biography of the New President of the American Cotton Manufacturers Association . .

IN POINT of years, Fred W. Symmes, just elected as president of the American Cotton Manufacturers Association, is relatively a newcomer to the textile manufacturing industry. He entered it actively within the past decade but his achievements in it since, and his previous record, make a story of absorbing interest and inspiration.

Fred was born in Greenville on June 9, 1879, the son of Whitner and Nettie Alexander Symmes; he was their only son, and had five sisters, four of whom are now living. His paternal grandfather, for whom Fred was named, was trained and practiced as a physician, later becoming editor of the Pendleton (S.C.) *Messenger*, when Pendleton was the center of a trading district that embraced Greenville, Anderson, and other cities that textile manufacturing and other industry have since made great. Grandfather Symmes, as a physician, attended the great John C. Calhoun, and, in his editorial capacity, made the *Messenger* a strong political influence in the days of South Carolina's secession. These facts are noted, not only for their interest, but to underline the point that Fred is inherently, completely and proudly a South Carolinian, with all of the tradition and heritage thus implied.

Fred attended private schools, and for two years attended Furman University in Greenville, where the beloved Ben Geer, at one time president of the American Association himself, was a professor of English. In his early 20s, Fred entered the retail furniture business in Greenville, displaying at an early age business acumen and an innate merchandising ability.

A latent interest in diversified activities manifested itself, along

with a pioneering instinct founded upon thorough study, and, with the encouragement of the late Lewis W. Parker and others, young Symmes organized and placed in operation the Nuckasee Manufacturing Company, for the fabrication of athletic underwear and similar products—the first of its kind in the state—utilizing the finished cloth of the then developing textile industry of the state. He still heads this plant, which has grown from an original 40 sewing machines to more than 300, and has kept pace with style trends and now produces high quality dress shirts, which the company merchandises direct under Symmes' supervision.

In 1929, the common stock of Nuckasee was sold to the Union-Buffalo Mills Company, which operates three cotton mills—at Union, Buffalo, and Fairmont, S. C. Symmes was made a director in the parent company, and, in 1932 was selected as president and treasurer of Union-Buffalo Mills Company, a position he still holds and to which he devotes actively the major part of his time.

In 1925, Fred Symmes was instrumental in the organization of the Piedmont Plush Mills at Greenville, S. C., and became its president and treasurer. Upon assuming the management of the Union-Buffalo Mills, he succeeded in bringing into the management of the Piedmont Plush Mills, Sydney Bruce as treasurer and active manager. Symmes likes this enterprise especially because of the diversified character and the fascination it provides in giving form, in so many ways, to the fibers it utilizes. It, like the other enterprises with which he is connected, has been consistently successful, and while he relies completely upon his associates there, it is doubtful whether his other duties permit him all of the time that he would like to enjoy in its fascinating processes and problems.

In 1929, Symmes and his associ-

ate, Sydney Bruce, directed the reorganization of Camperdown Mills, of Greenville, with Symmes as vice-president, and Bruce as president. In 1935, Symmes was made treasurer of the F. W. Poe Manufacturing Company, another large textile plant in Greenville. He is a director of the Southern Bell Telephone and Telegraph Company, with headquarters in Atlanta; a director and member of the finance committee of the Southeastern Life Insurance Company of Greenville, a director and member of the executive committee of the First National Bank of Greenville, and a member of the loan committee of the South Carolina National Bank. Subsidiaries of the Union-Buffalo Mills Company include the Buffalo, Union-Carolina Railroad, and the Union Manufacturing & Power Company. He is also a director of the Poinsett Hotel Company, and a director of Textile Hall Corporation.

Symmes, a life-long resident of his native Greenville, has always manifested an intense and active interest in its civic affairs, and deserves credit for the successful organization and operation of its Community Chest, and in the solution of its local relief problems during the depression. He is a member of the First Presbyterian Church of Greenville.

A review of the positions and connections just described discloses several interesting points. Aside from his first business enterprise—the furniture store—Fred Symmes still retains every major business connection he has assumed, a fact that has enlarged tremendously the scope of his activities.

A constancy of purpose and a total lack of the speculative tendency are thus clearly revealed. Every one of his present active business connections is identified with the textile industry, which he entered in reverse, as it were, since he was first a consumer of its products and now is a dominant factor in its field of production.

Such an imposing list of connections, furthermore, prompts inquiry into the man who holds them—and who has now assumed the titular leadership of his industry; into his characteristics, and traits, and personality.

Business associates and fellow manufacturers of the Greenville area, who have observed his progress in business—and thus have seen him "drafted" in more than one instance to direct the affairs of corporations in distress—unanimously agree that among the inherent traits that have contributed to his success have been his unqualified business and personal integrity, a thoroughness of thought and action, conservative caution coupled with prudence and long-distance thinking. Times were not easy for Symmes as a young man, and these traits combined early to give exercise to innate talent, energy and ambition. Into and back of every one of his decisions goes a combination of these characteristics. In his own businesses, and in the councils of the industry, he has never been known to take an extreme position, nor to make a hasty decision based upon immature thought and incomplete facts. He possesses naturally—and has developed to a high degree—a prescience, an ability to sense trends and movements; a faculty for assembling all of the facts bearing on a matter, and the ability to put the essential ones together into a clear picture and reach a conclusion on the basis of facts as they are, not as they were nor as they might have been.

Symmes operates in business in a surprisingly informal manner in the execution of his activities. He maintains no particular schedule of routine, no ostentatious embellishments and a minimum of formal trappings. His negotiations, almost universally, are conducted in personal conversation and instructions, he never having acquired an inclination for fluent letter-writing. The Nuckasee plant, by the way, occupies the buildings of the Old Huguenot Cotton Mills, one of the first cotton mills in Greenville.

Personally, Fred Symmes is a man of reticent nature. He is considerate and thoughtful, totally devoid of ostentation and preferring quiet congeniality to excessive demonstrations. With a full day-time schedule of business activities, he never has developed any hobby or recreation in the accepted sense of the term, except a fine saddle horse which he keeps on one of several farms he operates "on the side" and which doesn't see him sometimes for two months at a stretch. If the possession of a hobby might be ascribed to him, it would be his genuine interest in an affection for his friends. Quiet and unassuming of manner, and undemonstrative of the full depth of his sentiment and feeling, he revels in true friendship for its own sake, deriving a complete happiness both in partaking of it and contributing more than his own share to it.

He is an ardent football fan, attending all games possible in the South and is an especially interested follower of the Furman team and is president of the Furman "Hurricane Club".

Fred has never married—and thus, if we read the record aright, becomes the first bachelor to head the American Association. He resided, until about nine years ago, in the home in which he was born, on Buncombe Street in Greenville; and now lives with his sister, Miss Mary Symmes, at 104 East Washington Road in Greenville. He reads a great deal—mostly current literature on business, economic and financial matters. At least once a week he participates in an evening at contract bridge, sometimes at a mixed party—and the ladies know him as a delightful, interesting and thoughtful companion—but mostly in intense competition in a "stag" game with a group of intimate friends, who love him for his genuineness, his congeniality and capacity for the exercise of deep, abiding friendship and companionship.

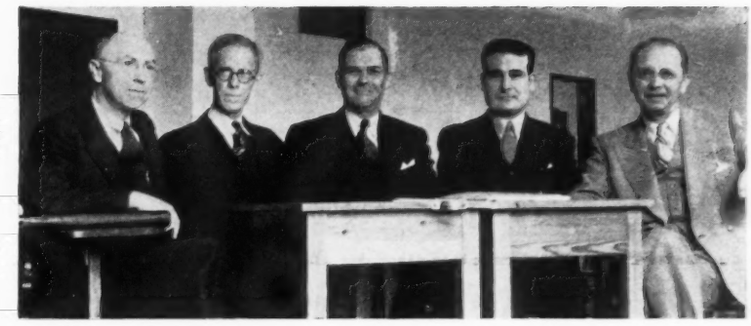
Thus we drag out of seclusion, insofar as the general public knows, a man of silent but dynamic force, who lives and loves and acts more deeply and more intensely than any one except his most intimate friends knows.

His greatest joy in life is his own mental and spiritual satisfaction, which is evidenced by the fact that he has not found any condition in life that has made it necessary for him to sacrifice a friend or to cheapen his ideals.

Cautious, courageous, constructive and persistent are adjectives that will finally be used to describe his efforts.

His life story portends a very democratic administration during his presidency of the American Cotton Manufacturers Association, and a serious study and consideration of the highest ethics and business policies that can be employed.

Conference Held on Sizing of Spun Rayon



The committee in charge of the project on sizing of spun rayon. Left to right, Mr. Appel, Mr. Chase, Mr. Harris, Dr. Yelland and Mr. Cobb. (Dean Nelson was absent due to illness)

FINAL STEPS in preparation for the projected research on the warp sizing of spun rayon and cotton-spun rayon were taken at a conference held at Raleigh, N. C., on Saturday, April 20, by parties interested in the project. This research, as has been announced, will be carried on under the auspices of the U. S. Institute for Textile Research, Inc. It will be conducted at the new textile school building of N. C. State College at Raleigh, under the "co-operative research" plan, and will be directed by an administrative committee consisting of:

Chairman: Carl R. Harris, manufacturing engineer, Erwin Cotton Mills Co., Durham, N. C.; Harold M. Chase, chief chemist, Riverside & Dan River Cotton Mills, Danville, Va.; Thomas Nelson, dean of the textile school at Raleigh; and Dr. W. E. Yelland, of the research laboratory of Corn Products Refining Co., Edgewater, N. J.

In direct charge of the work is F. Gordon Cobb, formerly vice-president and general manager of Springs Cotton Mills, Lancaster, S. C., and now market counselor of COTTON, who will actively carry on the research activities under the supervision of the administrative committee. W. D. Appel, chief of the textile division of the Bureau of Standards in Washington, is chairman of the research council of the sponsoring Institute.

All of these men (except Dean Nelson, who was confined by illness) attended the conference in Raleigh last month, and participated in outlining the purpose of and plans for the project to an interested group that included representatives of rayon manufacturers, mills now weaving or contemplating the production of spun rayon fabrics, and companies interested in supplying materials to be utilized in the sizing of spun rayon and combination-blend warps.

Dr. Appel opened the conference, explaining that on a similarly co-operative plan, the Institute had completed such a scientific research that was concentrated upon filament viscose rayons; that at that time, and subsequently, there had appeared the need for such a study in the field of spun rayon and spun-rayon-cotton warp sizing, and that the Institute's research council had proceeded with the development of such a study, that it was universally agreed to conduct it in the South, and that N. C. State College, with its new textile building and modern equipment, had been selected as the place of the study. He explained the co-operative financing plan under which these programs are conducted:

Each subscriber pays a fee of $150 for the year, which entitles him to receive immediately all progress reports, a year's contributing membership in the Institute, and five subscriptions to the Institute's magazine; as well as confidential progress reports and all other services of the research. Detailed information concerning subscriptions is available from C. H. Clark, secretary, 65 Franklin Street, Boston, Mass.

Mr. Harris followed Dr. Appel, stating briefly the general outline of the proposed investigation, and called upon Research Director Cobb, and Dr. Yelland and Mr. Chase for detailed discussion of the program. The remainder of the conference was devoted to a round-table discussion of details of the project, from which those present gained a comprehensive picture of the manner in which the research will be conducted; and those who are directing it secured invaluable suggestions and coments from many interested and experienced parties present. Subject to alteration, the plans call for:

A practical study of the sizing of spun rayon warps and of warps composed of mixtures of spun rayon and cotton. (This will embrace mixtures involving both viscose and acetate spun rayons, as well as, perhaps, mixtures involving wool and other fibers. The study will be limited, at the start, to a few representative size formulae. Warps will be slashed on commercial equipment, varying such conditions as the tension of the warp entering the size box, temperature of the size, pressure of the squeeze rolls, temperature of the drying cylinders, and yarn moisture content. The slasher will be equipped with instruments for measuring, recording, and controlling the level of the size and its temperature, the temperature of the cylinders, and the moisture content of the yarn.

Special attention will be given to the weaving of the warps, particularly with respect to the relative humidity and temperature of the air; the looms will be located in a room in which humidity and temperature can be controlled. The distribution and penetration of the size, stiffness, flexibility, resistance to abrasion, and performance in the loom of the sized yarns will be studied.

In addition to a slasher of commercial size, the project will utilize a miniature slasher that will make possible more rapid and flexible operation.

Offering, as it does, a practical study of a practical problem, directed by practical men as well as trained scientists, this program seems to warrant the full co-operation of the industry. The subject, on which no present standards are available, is one with direct appeal to several hundred mills already processing spun rayon, and has as well a definite interest to many others who —knowingly or not—are on the threshold of handling this new fiber.

Some of those attending spun rayon sizing conference at Raleigh

A Study of Textile Education in the United States

Based on a survey of the enrollments in the ten textile colleges of the country, and an analysis of their curricula, and requirements for graduation . . . .

By Robert W. Philip
Editor of "Cotton"

THE accompanying tables were compiled from a recent survey by COTTON of the 10 textile colleges of the United States, and reveal much information of value in connection with textile education in this country. For obvious reasons, the study was confined to those textile training institutions requiring the completion of a high school curriculum for admission to the day instruction; it included the evening non-collegiate courses offered by these colleges.

To have widened this brief tabulation beyond such institutions would have necessitated the inclusion of such full-time textile vocational high schools as those at Putnam, Conn., New York City, Danville, Va., Greenville, S. C., and Columbus, Ga.; Langdale, Ala.; and the relatively enormous enrollments in the night textile vocational schools of the southern states.

It should be noted that of even such similar institutions as our American textile colleges no tables could present precisely the significant statistics. Hence, even Table 1 is an *interpretation* of the enrollments of each of the colleges into statistics that can be compared with those of the other institutions. For instance, in some of the schools, one of the curricula may be named "textile dyeing and chemistry"; but in the table the name is generalized to "textile coloring and chemistry".

In some of the schools a manufacturing curriculum may be confined to one material such as cotton, wool, or silk; but in the table it would be included under the generalized "textile manufacturing" heading. One college has lengthened its longer curricula to five years. However, its 5-year enrollments are included here under the 4-year enrollments.

The enrollments under the head of "Post-Graduate Collegiate Courses" refer to pupils who have already been graduated from textile college curricula and are now pursuing more advanced textile studies. These post-graduate enrollments do not refer to undergraduates in textile curricula who happen to be graduates of literary and other college curricula.

Table 1, however, does disclose some general information assembled here in convenient form for the

TABLE 1

INFORMATION Interpreted from a Questionnaire Returned by the Colleges to "COTTON"

DETAILED DISTRIBUTION OF TEXTILE COLLEGE ENROLLMENTS 1939-40

	Two-Year Curricula in				Three-Year Curricula in				Four-Year Curricula in				Special Day Collegiate Courses	Post-Graduate Collegiate Courses	Total Collegiate Enrollment	Night Non-Collegiate Course Enrollments
	Textile Coloring and Chemistry	Textile Manufacturing	Textile Engineering	Textile Designing	Textile Coloring and Chemistry	Textile Manufacturing	Textile Engineering	Textile Designing	Textile Coloring and Chemistry	Textile Manufacturing	Textile Engineering	Textile Designing				
Year of Curriculum	1 2	1 2	1 2	1 2	1 2 3	1 2 3	1 2	3 1 2	3 1 2 3 4	1 2 3 4	1 2 3 4	1 2 3 4				
Lowell						10 8 6		3 1 1	53 38 39 15		38 23 27 24			6	292	1635
New Bedford					23 16 12	14 8 8		11						5	97	910
Bradford-Durfee	11 10		26	16		5 4 7							125		204	833
Rhode Island						4 3 9					13 9 3	16 11 6		14	88	311
Philadelphia		3			10 9 7		57 28 34								148	342
N. C. State									12 15 11 15	76 55 32 22	10 9 7 22	4 3 6 6		4	309	
			6	3					16 13 17 12		60 73 68 66	0 3 5 2			344	
Clemson Georgia Tech									4 5 6 4	9 13 15 13	2 3 3 3	3 5 7 5		1	101	14
Alabama Polytech									2	3 24 14 18	18				79	
Texas Tech									2 3 5		25 12 8 6	3 2 1			67	
Total of each curriculum	21	3	51		77	86	119	16	290	309	514	88	125	30		
Total in each length of curriculum				75				298				1201			1729	4045

TABLE 2

ENROLLMENTS INTERPRETED from a questionnaire returned by the colleges to "COTTON". Other information interpreted from official catalogs of the colleges.

	Percentage of Time or Credits (in one of the typical longer curricula) devoted to:								Summary of Enrollments in:						Tuition per Year		
	Non-textile Subjects	(a) General literary, social, science, and mathematical subjects not applied to engineering or textiles.	(b) Engineering and shop subjects not applied to textiles.	Textile Subjects: Economic, science, mathematical and laboratory subjects of a textile nature.	Years in Longer Curriculum	Number of Longer Curricula or Options	Typical Degree Granted	Number of Full-Time Faculty Members in Textile Subjects.	Two-Year Day Collegiate Curricula	Three-Year Day Collegiate Curricula	Four-Year Day Collegiate Curricula	Post-Graduate Day College Course	All the Day Collegiate Courses and Curricula	Evening Non-Collegiate Courses	Local	Out-of-State	Foreign
Lowell Textile Institute	52	22	30	48	4	6	BTE	26	0	29	257	6	292	1635	$150	$250	$500
New Bedford Textile School	18	4	14	82	3	5	0	12	(A)	92	0	5	97	910	20	150	300
Bradford-Durfee Textile School	32	18	14	68	3	1	0	7	63	16	0	0	204	833	20	75	75
Rhode Island School of Design	31	19	12	69	4	2	BTE	6	0	16	58	14	88	311	225	225	225
Philadelphia Textile School	10	10	0	90	3	2	0	17	3	145	0	0	148	342	285	285	385
N. C. State College	61	56	5	39	4	5	BS	9	0	0	305	4	309	0	80	250	...
Clemson College	50	39	11	50	4	3	BS	15	9	0	335	0	344	0	65	155	...
Ga. School of Technology	66	49	17	34(a)	4	4	BSTE	6	0	0	100 x	1	101	14	100	200	200
Ala. Polytechnic Institute	58	35	23	42	4	4	BSTE	4	0	0	79	0	79	0	80	140	...
Texas Technological College	69	40	29	31	4	3	BSTE	3	0	0	67 x	0	67	0	50	50	50

(A) 26 additional pupils in Mechanical Engineering not included.
(*) 125 additional special day collegiate textile pupils included in this total.
(x) This does not include enrollees in the Freshman year, who although having elected a textile curriculum are not yet taking textile subjects.
(a) Included in the enrollment at this college are 26 co-operative students who during five years attendance at the college receive approximately two and one half years of actual mill experience.

first time. It shows, for example, that in the 10 textile schools of the country, there is a total collegiate enrollment of 1,729 students in all years of the school curricula. Coincidentally, the 10 schools are distributed evenly in the two major textile manufacturing sections of the country, there being 5 in the South and Southwest, and 5 in the North and East; the collegiate enrollment in the five northern or eastern schools is 890, with the remaining 839 in the southern colleges.

In the graduating classes of these 10 schools (the third year of the curricula in some cases, the second year in others, and the fourth year in others) there is a total of 369 seniors eligible for graduation this spring. Not to be overlooked is the enrollment of 4,045 students in the night non-collegiate courses operated by the textile colleges, practically all of this being in the northern institutions. The reader is left to ascertain other general facts of interest from this table.

In Table 2, the enrollments are interpreted from answers to a questionnaire returned by the colleges to COTTON. The other information is interpreted from the current official catalogs of the colleges.

In Table 2, under the head of "Percentage of Time or Credits", we attempt to present the relative emphasis of each college upon strictly textile and other courses. Most of the colleges show in their catalogs a system by which there is assigned to each course in each curriculum a number of credits, the number being proportioned to the training value that the institution places upon that course. This training value is in turn proportioned to the time spent in the course. A laboratory course is given, however, considerably less of these training value credits than a lecture course requiring an equal time in attendance. But taking a whole curriculum and adding up those training values credited to the textile group of required courses and to other groups of required courses one would seem to arrive at the relative emphasis that the institution places upon each group of courses.

The number of elective courses in these textile curricula are few; all of them, not otherwise specified, were counted as textile courses. In those instances in which the institutions' catalogs do not show such training value credits, the relative emphases are arrived at by proportioning the actual time spent in each course. Since the enrollments in the shorter curricula at each institution are small compared with the enrollments in each institution's longer curricula, it would seem fair to take one of the longer curricula as a measure of the institution's relative emphasis upon strictly textile courses.

Classification of Subject Matter

Whether or not courses are classified as textile or non-textile depends upon a careful reading and interpretation of what each college's official catalog says of each of its own courses. Like Will Rogers, all we know is what we read in the papers. And even careful readers misinterpret.

If the catalog description of a course shows no direct relationship to any phase of the textile business it is classified under the

head of "Non-Textile Subjects". Column (a) includes those courses whose catalog descriptions would fit similarly named courses in liberal arts colleges, such as English, fine arts, history, sociology, psychology, general chemistry, general physics, analytical geometry and the calculus. Column (b) includes those courses whose catalog descriptions would fit similarly named courses in non-textile engineering curricula, such as machine shop, welding, slide rule, shop mathematics, mechanical drawing, thermodynamics and electric machines. Under the head of "Textile Subjects" are included all subjects whatsoever whose catalog descriptions show direct relationships to the textile business, such as textile industrial art, fabric analysis, textile designing, history of textiles, textile economics, textile chemistry, textile dyeing, textile testing, fiber microscopy, textile mathematics, carding calculations, spinning calculations, weaving calculations, textile cost accounting, yarn and fabric manufacturing, operation of opening, carding, spinning, warp preparation and weaving machinery.

With this explanation, the reader will be able to study the break-down, in percentage of time or credits, of the requirements for graduation by each institution of textile subjects and non-textile subjects.

There are several fields of opinion as to what would constitute the ideal textile college training. Frequently, an individual's opinion on this point is determined by his own experience after leaving school, or by his immediate requirements at a given time under a special set of circumstances. Invariably, the comment implies some specific shortcoming in textile training. Thus we have from one source, in criticism of practically any one of the schools, a complaint that the college doesn't give its graduates enough downright practical manufacturing training, and, from another man, an equally emphatic criticism that the graduates of the very same school do not receive sufficient training in the broader fields of general business management and economics.

One man said recently that he

Faculties: Whether or not a combined comparison of (1) "Percentage of Time or Credits", (2) "Number of Full-time Faculty Members in Textile Subjects", and (3) the respective enrollments, is a fair and helpful comparison as between the colleges depends upon how clearly the number of such faculty members have been interpreted from the catalogs and to what extent each college uses its additional part-time evening school faculty, not included in Table 2.

needed an expert textile cost accountant, and was disappointed to find none available among recent graduates of textile schools; another, with his son enrolled in one of the schools, said he had found that the schools turned out material suitable for mill jobs up to and including a superintendency, but, because he hopes for his son to succeed him in his managerial position, deplored the fact that more time was not devoted by the school to such things as tax problems, public relations, political economy and the like. Incidentally, his son happens to be attending one of the schools with more than half of its required time or credits already devoted to non-textile subjects.

Such observations indicate that the real purpose of textile education has been overlooked; as is the fact that a boy in school has a limited number of hours per week, and weeks per year, into which to compress his education.

We make no point here of arguing the relative merits of the respective schools. This survey has no point to prove, nor is it an effort to support or to contradict any pet theories. Its purpose solely is to present, in convenient and accurate form, a picture of textile education as it exists in this country today, and to leave to the individual reader the privilege of drawing any conclusions and making any comparisons that may appeal to him.

However, to argue that the usual academic and general engineering subjects as described in the catalogs and inserted for their broadening effect, is related textile subject-matter, and that the student thus broadened can readily apply them to textiles when needed, is to come dangerously close to arguing the non-necessity of special textile subject-matter. And no one who sees with deep concern the immense amount of directly related training in the arts and sciences of the textile business so badly needed by the graduates, which the catalogs do not even mention, will admit this absurdity.

Whether or not there has been too much, or too little, of what is called "integrating" or "broadening" in our textile college curricula, we would leave to a careful study of how relatively successful have been the graduates of the various curricula and schools in securing and in advancing in the textile careers for which they have purportedly been trained.

We do know, however, that what most of us mean by intellectual "broadening" is far more apt to come from a few things thoroughly understood in all their ramifications and usefully carried out than it is from a whole university-full of knowledge unconcentrated on dominating purposes. Anyway, we are inclined to agree with Herbert Spencer, the great English philosopher, that "accomplishments, the fine arts, belles-lettres, and all those things which, as we say, constitute the efflorescence of civilization, should be wholly subordinate to that knowledge and discipline in which civilization rests. *As they occupy the leisure part of life, so should they occupy the leisure part of education.*"

It would seem to us that the more intensely distressed the textile industry in a section or throughout the nation, the more it needs research and engineering training really integrated on the textile problems to be solved.

Certainly, the facts revealed by this survey should blast, once and for all, the impression that prevails in some quarters, that the textile schools are producing graduates faster than the industry can absorb them. Even if all of this year's crop of 369 seniors follow their chosen profession—and experience shows that this will not be true—this seems a pitifully small number of trained men to be taken up by a field as large, and diversified, and extensive in its primary and allied phases, as is the textile industry.

Stainless Steel

Properties—Maintenance—Fabrication for Textile Applications

By J. E. Goodavage and G. W. Hinkle*

(This is the concluding installment of a two-part article. The first installment appeared on page 73 of the April issue.—The Editors.)

Sawing—For this operation, high speed or similar alloy type blades are recommended, the fine tooth, wavy type blade being preferred. In all cases, the pressure should be constant, due to reasons previously explained on cold working of the surface metal. The same type lubricants as recommended for drilling and machining, except with a lighter body for penetration, can be used for power saws.

Threading and Tapping—Chasers and taps for threading should be ground so that 3 or 4 threads are engaged to do the cutting. The hook or angle on the cutting face of the chasers should be ground at approximately 15-20 degrees depending on the pitch. This applies to the free cutting types 14-18 per cent chromium, free machining—12-14 per cent chromium, free cutting and 18-8 free machining (chromium-nickel type). Surface speed of approximately 20 to 35 feet per minute has been found to be most suitable. The diameter of the piece governs the speed. Finer pitch threads can be run with increased speeds of 10 to 15 per cent.

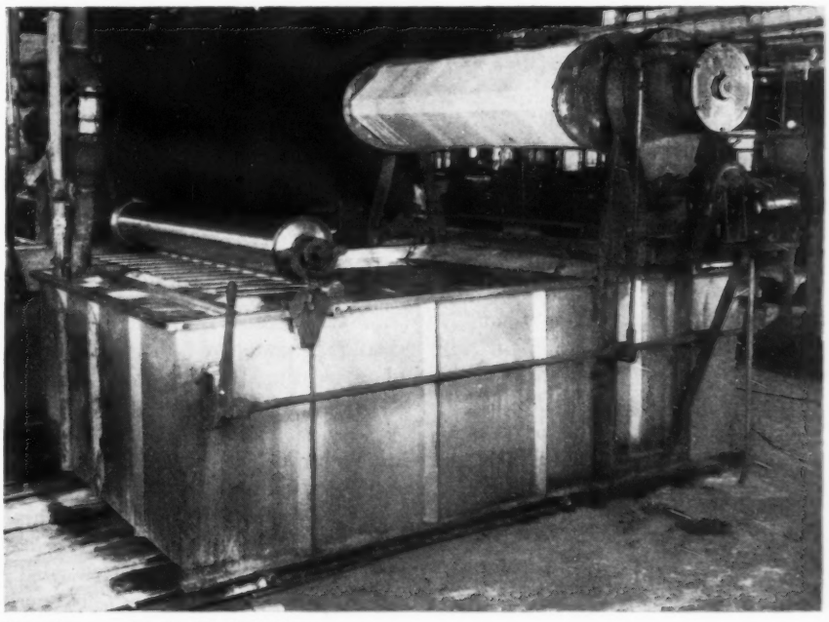
For the straight chromium types, such as 10-14 per cent chromium and 14-18 per cent chromium, etc., the surface speed should be reduced approximately 25 per cent and for regular 18-8 and similar chromium-nickel types approximately 35 per cent of the respective free machining grades. Penetration of lubrication to the cutting edges is very important. Chasers should be flooded with the coolant at all times.

Lubrication—The sulphur base oils have been found to be most satisfactory for all machining and cutting operations. A combination of paraffin and sulphur base oils mixed is regularly used, the amount of sulphur base oils varying in accordance with the severity of the work. Kerosene is occasionally added to obtain better penetration. Water soluble oils can be used for light drilling, although the mixture should be heavier than that used for regular drilling operations.

Welding—Practically all of the stainless steel used in equipment must be welded. A discussion of the physical characteristics of these chromium-nickel alloys relative to welding should be desirable.

The 18-8 stainless steel alloys have high thermal expansion of about 60 per cent more than that of common steel, a low heat conductivity of about ⅓ to ½ that of common steel, and a lower melting point, in addition to being very fluid in the molten state. These same characteristics apply to the straight chromium type, except that the coefficient of expansion is about 10 per cent less than that of common steel. These factors should be taken into consideration in the design of any welded equipment in order to prevent difficulties, which might arise from undue strains, warpage, etc.

While alloys of the chromium-nickel group make by far the most satisfactory welds from the standpoint of physical tests, they do under certain conditions exhibit a tendency toward "weld decay". When an 18-8 stainless steel with more than .08 per cent carbon is heated



Illustrations courtesy Republic Steel Corp.

Dyebeck constructed of stainless steel.

*Mr. Goodavage is a member of the faculty of the Philadelphia Textile School, and Mr. Hinkle is an engineer with Republic Steel Corp.

A line of dye jigs in which stainless steel is largely used.

between 1000 degrees F. and 1500 degrees F., the excess carbon is precipitated or segregated out of solution and deposited along the grain boundaries in the form of carbides. These carbides are less resistant to corrosion than is the parent metal, with the result that wherever they are present more rapid attack will occur when exposed to corrosive conditions. In making a weld, the metal deposited and the joint itself are heated to the melting or fusing temperature, which is around 2690 degrees F. The body of the work remains cold. Hence, there will be a zone parallel to and near the weld, which will be heated between 1000 degrees and 1500 degrees F. and in which area carbides will be precipitated. This region may be wide or narrow, near or some distance from the weld, depending upon the type of joint and method of welding, which determines, of course, the total amount of heat applied. If welding is rapid, the zone will be narrow and close to the weld; if slow, it will be wide and farther away.

This carbide can be put into solution again by heating to a temperature about 1900 degrees F. or higher and cooling fast through the critical range. Air cooling will be sufficiently rapid if the section is thin, 1/16-inch or less, but a water quench is advised if the apparatus is heavy.

If the material contains less than .08 per cent carbon, such as 18-8-S or 18-8-S-Mo., this carbide separation will be practically negligible, simply because there is not much carbon present and the small amount available remains in solid solution in the alloy itself. This carbide precipitation will not seriously affect the physical properties until it becomes quite extensive but it will reduce the corrosion resistance considerably if present even in small quantities.

While reducing the carbon content to below .07 per cent will practically eliminate precipitation of carbides during the short time of welding, it will not necessarily stop such condition in equipment operating continuously between 1000-1500 degrees F. Additions of such alloys as columbium, titanium, etc. to the low carbon product will still further reduce this tendency.

Electric Arc Welding—Electric arc welding has been found to produce highly satisfactory results on stainless steels. Reverse polarity should be employed the same as when welding the non-ferrous metals, such as bronze, aluminum, copper, etc. That is, the wire or welding electrode is connected to the positive terminal of the generator, and the work to the negative. This is directly opposite the practice used with common steel bare wire, but quite similar to the practice followed with heavy flux coated rods of the shielded electrode type. While this will generally give best results, it cannot be made a hard and fast rule. Some instances have been found, especially when heavy plates were involved, where straight polarity produced better fusion and penetration. However, for light plates up to 3/16-inch or so, reverse polarity is always advised.

The 18-8 alloys have a high coefficient of expansion, about 60 per cent greater than mild steel. In setting up any job this must be taken into account and allowance made. If automatic welding is used, the edges will be clamped parallel the same as with ordinary steel, extra allowance being made only when movement is calculated.

In the fabrication of general tank work in which light plates are employed, two general methods have been found quite satisfactory. In one case the plates are clamped in a jig. This consists of a heavy base with a copper chill bar, a narrow shallow groove running lengthwise along the center of one surface. Pressure is applied by two long bars beveled at an angle of about 45 degrees along the edges facing each other, making an opening of 90 degrees. The bars themselves are about 1 inch apart at the bottom and are so set that the groove in the chill plate will be in the center. The sheets to be welded are then clamped in this fixture with the polished side down, in the case of polished sheets and the edges held slightly apart and placed over the groove. The clamps are then applied from the top, holding the two edges in place while a weld is made from the unpolished or back side. The groove in this case acts as a mold holding the metal in shape to facilitate grinding in some cases, or merely to give proper reinforcing. This jig will be found satisfactory for flat straight seams. For circular or curved joints the same principle modified can be used, if economy as controlled by quantity production so warrants.

The second method used quite extensively, especially where a variety of shapes and sizes of products is made but not in sufficient quantity to warrant special fixtures, consists in fitting up the job for butt-welded seams and tack welding about every 2 inches on the back side. If any warping should occur, the joint can be straightened. A

light weld penetrating about halfway through the sheet is then laid on the inside. A re-inforcing bead is deposited on the outside, completing the weld.

The 18-8 alloys also possess a lower heat conductivity than steel. This tends to keep the heat of the arc localized at the point of contact rather than allowing it to travel rapidly back into the plate. Due to this fact, together with its lower melting point, less heat is required for the same size plate and wire than is ordinarily employed. In other words, if 110-120 amperes were used with a 1/8-inch steel wire, we would need only about 90-100 on 18-8. Stainless will penetrate much better than steel because it is very fluid when molten, while ordinary steel tends to be more viscous and sluggish.

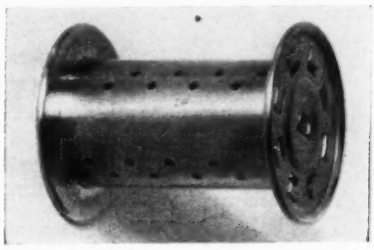
Flux coated rods are necessary in this type of welding to protect metal while molten.

Gas Welding—Gas or acetylene welding is used quite extensively on stainless steel, especially in the lighter gauges, such as 18 gauge and thinner. Gas welding, of course, is slower than the electric arc method and therefore, apt to produce considerably more buckling and warpage. However, it is difficult to arc weld lighter than 18 gauge in many cases; hence, gas welding is employed in this range.

The flame used should be as small as possible, supplying just sufficient heat to produce good fusion. Any excess heat will simply aggravate buckling to a greater degree. The ideal flame adjustment would be exactly neutral, but, since this is rather difficult to maintain at all times, it is advisable to use a slight excess of acetylene. The object of this is to develop an atmosphere around the molten metal, protecting it from the air just as the flux did on welding electrodes. If too much acetylene is used, that is, if the flame is too highly carburizing, excess carbon will be introduced into the weld metal, making it weak and brittle. On the other hand, if the flame runs oxidizing, due to too much oxygen or too little acetylene, the weld will appear badly burnt and be quite porous.

Although this flame will protect the upper side of the weld, it will have no effect on the under side. It is necessary, therefore, to apply a flux along the bottom side next to the edges. This flux is generally easiest to apply by making into a water paste about the consistency of molasses and allowing to dry a few minutes after applying, or long enough to permit it to become fairly solid before welding. As soon as the heat is applied, this flux will fuse, forming a sort of mold to cover the bead and at the same time to protect it on the under side.

Spot, seam and resistance welding can be employed on these alloys with slight variation in technique or equipment set up used on common steel to take care of the metal characteristics discussed. The recently developed atomic hydrogen method of welding is very satisfactory on stainless steels and is to be recommended where it is necessary



A silk steaming bobbin fabricated completely from stainless steel.

to polish weld to a high finish. Metal cleaning and distortion on light gauges, especially, can be held to a minimum with this process.

Soldering—Silver soldering and brazing is not recommended on stainless alloys where corrosion is of prime importance, due to their variation in corrosion resistance plus galvanic action that may develop because of metal differences.

Cleaning, Grinding, Polishing—The scale and discoloration produced by welding should be removed from the surface to promote the maximum corrosion resistance. In some cases, where the equipment is small, this can be accomplished by pickling in a tank. In other cases, such as large equipment, this can be done by scratching with a stainless steel wire brush and swabbing off with an acid solution and then neutralizing with caustic soda or other alkaline solution immediately after washing the acid from the equipment.

The following pickling and neutralizing:

1. 20 per cent Hydrochloric Acid Solution—140 degrees F.
2. 10 per cent Nitric plus 2-4 per cent Hydrofluoric Acid—120 degrees F.
3. 5 per cent Caustic Soda or Washing Soda Solution

is satisfactory for neutralizing these acid pickling solutions after a water rinse.

When it is necessary to grind the weld flush and polish to a high finish, as when polished sheets are used in the fabrication, grinding and polishing are necessary.

Grinding, Polishing and Buffing—The grinding, polishing and buffing of stainless steels must be considered differently from other steels and non-ferrous metals. Because stainless steels are tougher than other steels, they tend to drag and wear out wheels more rapidly. They conduct heat away more slowly than other steels and non-ferrous metals and, therefore, are easier to overheat and warp.

Passivation — Passivation of stainless steel with a 10-15 per cent solution of nitric acid either at room temperature or warm (140 degrees F.) has a two-fold objective.

First, it removes any iron that may be embedded in the surface of the steel during fabrication such as would occur during forming on a brake, rolling into cylinders and machining where occur abrasion with common steel dies, rolls and machine tools. If this iron contaminated surface is not passivated, light rusting may occur where abrasion or scratches appear on a machine cut surface. This rusting is a surface condition but under some instances, can be progressive.

Second, it theoretically heals and re-builds the chromium oxide film on the surface, which is essential for complete corrosion resistance to the acid solutions employed. As mentioned in the fore-part of this paper, periodical passivation of stainless steel equipment in service is recommended.

Chapman with Cochrane

Charles M. Chapman is now representing Cochrane Corporation, Philadelphia, Pa., on flow meters in the Cincinnati territory, covering parts of Ohio, Indiana and Kentucky. Mr. Chapman's office is in Room 715, Schmidt Building, Cincinnati.

Spinning Speeds Analyzed

By E. G. Field

William H. James and Associates

• This article logically follows the one by Mr. Field on "Checking Spindle Speeds", which appeared on pages 48 and 49 of the March issue of "Cotton". It attempts to explain a relationship which we have never seen discussed previously in any text book on the subject.

There were some unhappy mechanical errors in the production of the previous article, in the March issue, and readers are directed to the "Errata" note on the next page which corrects them.

THE RING spinning frame has a regular delivery of production that is dependent upon the gearing and the speed of the first driven element. This definite relation can be explained, thus:

Drum RPM	1,049
Spindle Ratio	× 8.533
Spindle RPM	8,951
Twist per Inch	÷ 20.97
Delivered Inches per Minute	427
Pi	÷ 3.1416
1" Front Roll RPM	136
Front Roll Diameter	÷ 1.00
Actual Front Roll RPM	136

And this relationship may be stated in a simple formula, as follows:

$$\frac{\text{Drum RPM } 1049 \times \text{Spindle Ratio } 8.533}{\text{20.97 Twist per Inch} \times \text{3.1416 } Pi \times \text{1.00 Front Roll Diameter}} = \text{Front Roll RPM } 136$$

It is an established fact that the twist constant is the product of the theoretical twist per inch and the teeth in the twist gear. This may be expressed, thus:

Twist Constant	650
Teeth in Twist Gear	÷ 31
Twist per Inch	20.97

Which relationship may be stated directly in a formula, as follows:

$$\frac{\text{Twist Constant } 650}{\text{31 Twist Gear}} = \text{Twist per Inch } 20.97$$

By substituting this last fact in the first formula, the relationship may be reduced in this manner:

$$\frac{1{,}049 \times 8.533}{\frac{650 \times 3.1416 \times 1.00}{31}} = 136 = \frac{1{,}049 \times 8.533 \times 31}{650 \times 3.1416 \times 1}$$

The denominator in this last equation is fixed for the particular frame so may be separated as a constant, thus:

$$\text{Twist Constant } 650 \times \text{Pi } 3.1416 \times \text{Front Roll Diameter } 1.00 = \text{Machine Constant } 2.042$$

A part of the numerator is also fixed, so it may be combined with the machine constant, as follows:

$$\text{Spindle Ratio } 8.533 \div \text{Machine Constant } 2{,}042 = \text{Drum Speed Constant } .004179 = \frac{8.533}{650 \times 3.1416 \times 1}$$

Using that portion of the original formula as a constant, the original formula may be restated in the simple form:

$$\text{Drum Speed Constant } .004179 \times \text{Drum RPM } 1{,}049 \times \text{Twist Gear } 31 = \text{Front Roll RPM } 136$$

So long as the same drive is continued in use, *that is with the same drum speed,* then the product of the drum speed constant and the drum speed will remain unchanged and the calculations will be expedited by advancing to a front roll speed constant, in this way:

$$\text{Drum Speed Constant } .004179 \times \text{Drum RPM } 1{,}049 = \text{Front Roll Speed Constant } 4.384$$

And this front roll speed constant, *for a particular drum speed,* when multiplied by the teeth in the twist gear will furnish the speed of the front roll, thus:

$$\text{Front Roll Speed Constant } 4.384 \times \text{Twist Gear } 31 = \text{Front Roll RPM } 136$$

Going one step further, the spindle speed may also be computed from the front roll speed constant, in this way:

$$\text{Front Roll Speed Constant } 4.384 \times \text{Machine Constant } 2{,}042 = \text{Spindle RPM } 8{,}951$$

And this may be proved readily from the original formula where it is noticeable that the numerator stated the spindle speed, thus:

$$\text{Drum RPM } 1{,}049 \times \text{Spindle Ratio } 8.533 = \text{Spindle RPM } 8{,}951$$

So it is established that there are definite relations between the speeds of the spindle, the drum, and the front roll. These relations can be expressed in simple formulae which are useful for two purposes: (1) To compute the front roll speeds when using any selected spindle or drum speeds and twist gears, and (2) To test the correctness of any reported combinations of speeds.

SPINNING SPEEDS ANALYZED

Illustration "A"

Computation of Front Roll Speed from Selected Spindle Speed

Yarn		Twist				Spindle		Drum		Front Roll	
Number	Sq. Rt.	Multiplier	Turns	Constant	Gear	R.P.M.	Ratio	R.P.M.	Speed Constant	Speed Constant	R.P.M.
4	2.00	4.75	9.50	650	68	4,950	8.533	580	.00418	2.42	165
8	2.83	4.75	13.44	650	48	6,650	8.533	779	.00418	3.26	156
12	3.46	4.75	16.44	650	39	7,750	8.533	908	.00418	3.79	148
16	4.00	4.75	19.00	650	34	8,450	8.533	990	.00418	4.14	141
20	4.47	4.75	21.23	650	31	8,950	8.533	1,049	.00418	4.38	136
24	4.90	4.75	23.27	650	28	9,200	8.533	1,078	.00418	4.51	126
28	5.29	4.75	25.13	650	26	9,500	8.533	1,113	.00418	4.65	121
32	5.66	4.75	26.88	650	24	9,500	8.533	1,113	.00418	4.65	112
36	6.00	4.75	28.50	650	23	9,700	8.533	1,137	.00418	4.75	109
40	6.32	4.75	30.02	650	22	9,700	8.533	1,137	.00418	4.75	105

Illustration "B"

Checking Front Roll Speed through Use of Drum Speed Constant

Number		Twist		Front Roll		Drum	
Frame	Yarn	Constant	Gear	R.P.M.	Speed Constant	R.P.M.	Speed Constant
3	4	650	68	165	2.42	580	.00417
7	8	650	48	156	3.25	779	.00417
14	12	650	39	148	3.79	908	.00417
20	16	650	34	141	4.15	990	.00419
23	20	650	31	136	4.39	1,049	.00418
28	24	650	28	126	4.50	1,078	.00417
31	28	650	26	121	4.65	1,113	.00418
35	32	650	24	112	4.67	1,113	.00420
37	36	650	23	109	4.74	1,137	.00417
16	40	650	22	105	4.77	1,137	.00419

Drum Speed Constant is $\frac{8.533}{650 \times 3.1416 \times 1} = \frac{8.533}{2,042} = .00418$

In Illustration A a tabulation is furnished showing the computation of front roll speeds for different yarn numbers being run at selected spindle speeds. Illustration B shows the tabulation in reverse order with the front roll speeds worked down to the drum speed constant for proof with the computed drum speed constant, as was done in the article on "Checking Spinning Speeds" (page 48, March 1940 COTTON.)

An occasional study of the speeds in most spinning rooms will often disclose some peculiar conditions, many of which can be traced back to wrong pulleys. Usually the mistakes are unfavorable to the company and may be restricting the weekly earnings of the operator. An annual check-up will serve as a good audit of speeds. Certainly predetermined standards for setting piece rates and for cost purposes should be predicated upon a factual study of machine speeds.

ERRATA

IN THE article, "Checking Spindle Speeds", by E. G. Field, on pages 48 and 49 of March COTTON, several serious errors, due to mechanical mistakes in printing, appeared.

In line 2, second column, page 48, "Item I" should have read "Item 1". In line 9 of the same column, "in italics while regular type is used", should have read, "in regular type while italics are used".

In the second formula, in the first column on page 49, "Front Roll Speed" should have read, "Front Roll Speed Constant".

In line 17 of the second column, page 49, the word "unchanged" should have read "exchanged".

We regret these errors, and hope this notice of them will to some extent aid in correcting misunderstandings resulting from them.—The Editors.

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Rayon Cord Tires

Rayon cord tires have achieved mileage records as high as 3000 per cent above standard tire performances, William H. Bradshaw, director of rayon research for E. I. Du Pont de Nemours & Company, reported on April 8 in an address before the general session of the American Chemical Society. A new rayon developed specifically for tires has produced "astounding results," under severe temperature and load conditions, he told the Society. He cited "carefully controlled tests covering many millions of miles." On an overloaded, high speed run in a hot country, rayon tires gave 80,000 miles of service in circumstances that wore out ordinary tires after 3000 miles. In another instance, the rayon cords held up for 18,000 miles of duty under the same 106 degree temperature which ended the usefulness of standard tires in 600 miles.

Rayon for tires was introduced by Du Pont under the name "Cordura." Mr. Bradshaw disclosed it has a higher tensile strength than structural steel, and is twice as strong as the rayon employed for ordinary textile fabrics. The secret of its success in tires, he explained, is its ability to maintain its great strength at elevated temperatures. In practical terms, a rayon tire is as safe at 105 degrees as the older type tire at 75 degrees, he said.

LENO WEAVING *Article 2* by Ivar Moberg

• In this, the second installment, Mr. Moberg continues his discussion of leno weaving, giving, in addition to a description of the principals themselves, practical ideas on the subject derived from years of first-hand experience in leno weaving and its development. The first installment, clippings of which are available upon request, appeared on page 77 of the April issue. Interested readers are urged to preserve their copies of each installment, as there is some cross reference from one installment to the others.

Readers are invited to submit specific questions and problems relating to leno weaving to this magazine for discussion by Mr. Moberg.

FIG 7 shows a portion of a straight, 1 cross 1 leno weave, repeating on 2 ends and 2 picks. To produce this weave, one set of steel doups, one jumper harness, one back harness, or jazz bar, and a slackener are required. The right warp end is the doup end which, as shown, is raised over the filling on every pick. The warp end to the left is the ground which is depressed under the filling on every pick.

Below the weave is shown the drawing-in draft. It will be seen how the doup end is passed underneath the ground end and drawn through the doup needle on the other side. The reading is shown under the drawing-in draft. It must be borne in mind that all the ends in any one leno group must be reeded in the same dent. The leno group must not be split, no matter how many threads it comprises, but two or more complete leno groups can be reeded in the same dent.

To the right of the weave is the weaving plan. As shown, the two doup standards are operated in plain weave order. The two next harness jacks are reserved for the selvages, or if there are self selvages, these jacks are left idle. The next harness jack is used for the slackener if this is of the positive type. Otherwise, this jack is also left idle. There must be a certain space between the doups and jumper harness to lessen the angle of the doup ends in the cross shed. Hence, some jacks are skipped as far as the leno is concerned, but the skipped jacks can be used for any other weave in the cloth. The back harness, as previously stated, are motionless and the jumper harness is raised a little more than half way up and down again, between every pick.

Fig. 8 shows the 1 cross 2 weaving plain, or 3-end leno. This leno is used when a firmer weave is desired and also for fancy figure leno, in which the contrast between a leno and plain weave is utilized to produce a pattern in the cloth. The drawing-in draft is shown below the weave and the weaving plan is shown to the right of the weave. In this weave, no jumper motion is required since the ground threads weave plain and therefore pass each other half way up during the change. The three threads must be reeded in the same dent.

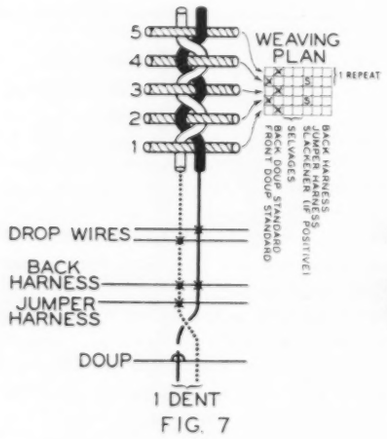


FIG. 7

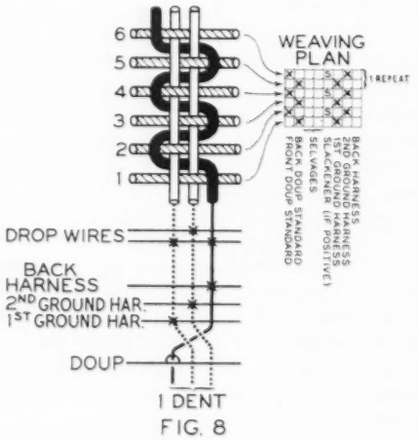


FIG. 8

Fig. 9 shows a portion of the same leno weave as that which is shown in Fig. 7, but in combination with a plain weave. The drawing-in is similar to that of Fig. 7 but the weaving plan is extended to show the plain weave portion. It will be noticed that while the leno portion is being woven, the jumper harness is raised half way up and down again, by the jumper motion, between every pick. As the plain weave portion is being woven, the jumper harness becomes a standard harness, operating in plain weave order, that is, up for one pick and down for the next. The jumper motion is made ineffective while the plain weave is being woven, since the harness which it operates, is raised beyond the capacity of the jumper motion by the regular harness motion.

It will also be noticed that only the back doup standard is raised in opposition to the jumper harness while the plain weave portion is being woven. The front doup standard could also be used instead of the back doup standard to produce a plain weave. This, however, would form a cross shed in the plain weave but since this is subjecting the warp ends to more strain, it is rarely used. To obtain a clear change from leno to plain and plain to leno the pattern in each weave usually repeats on an odd number of pick, so that the first and last picks of the leno weave is a cross pick.

Fig. 10 shows the same 3-end leno weave as in Fig. 8 but in combination with plain weave. The drawing-in is similar to that

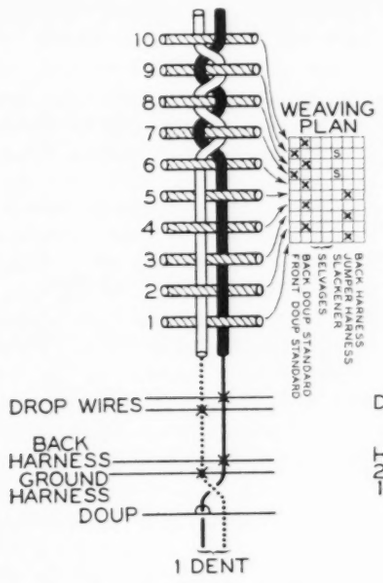


FIG. 9

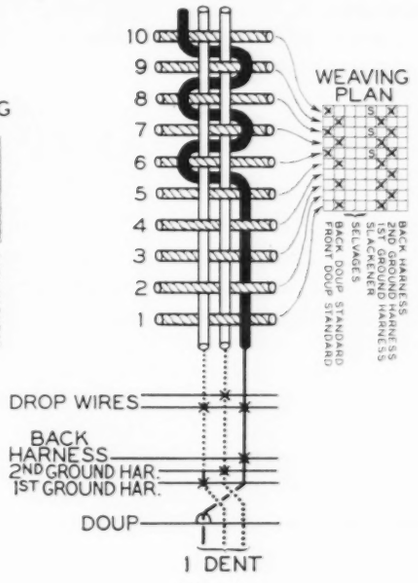


FIG. 10

in Fig. 8 but the weaving plan shows a portion of the plain weave in addition. No jumper motion is required to produce this weave as the two ground ends, weaving plain, pass the center of the shed between every pick.

The plain weave portion in Figs. 9 and 10 may be made further pronounced by crowding the picks. The prominence of the pattern depends upon the contrast of the leno and plain weave portions and it is therefore paramount that the leno portion be as open as possible while the plain portion should be as close as possible. The latter is accomplished by crowding the picks, in stopping the take-up while the plain weave is being woven. Stopping the take-up for a number of picks in a pattern immediately raises the question of what pick gear to use to give the average picks per inch of cloth. This can be easily calculated, however, by using the following formula:

Divide picks in pattern by picks taking-up and this quotient into the average picks per inch will give the number of picks for which the take-up motion should be set. For example, if there are 15 picks in one pattern and the take-up is stopped 6 picks and taking-up 7 picks of the pattern and an average pick of 12 per inch in the cloth is required then: $15 \div 7 = 2.14$ and $12 \div 2.14 = 5.60$, the number of picks that the take-up should be set up for.

Figs. 11 and 12 show the same leno weave as that employed in Fig. 7, but woven from two warp beams. In this case the ground warp is under heavy tension, forcing the ground ends to occupy a straight line, while the doup warp is under very little tension, forcing the doup ends to do all the bending. The take-up of the ground ends is therefore almost *nil*, being only about 2 or 3 per cent, while the take-up of the doup ends is extremely large, being 25 per cent or over, depending upon the construction of the fabric.

The drawing-in drafts are shown below the weaves and the weaving plan, which is the same for the two weaves, is shown at the right. Fig. 12 has right and left doups, which produces a pleasing diamond effect in the fabric.

Fig. 13 shows a 2 cross 2 weaving plain in combination with a

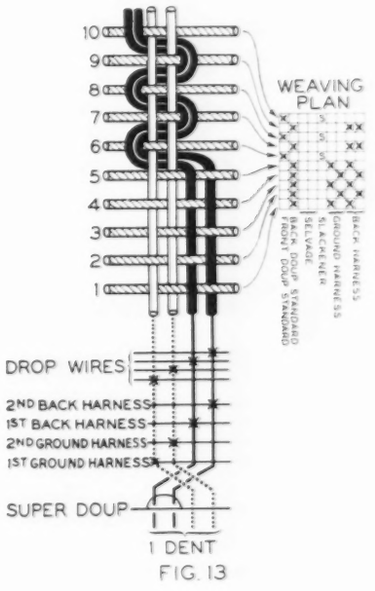


FIG. 13

portion of plain weave. It will be noticed that the doup ends are separated in the plain weave portion which makes it necessary to employ the super doup, shown at *F* in Fig. 1 (page 77, April issue). The cross shed formation is similar to that previously described and is formed merely by raising the front doup standard. The

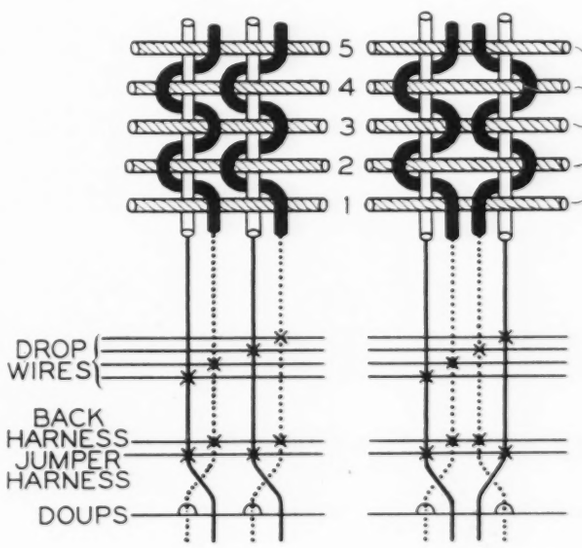


FIG. 11

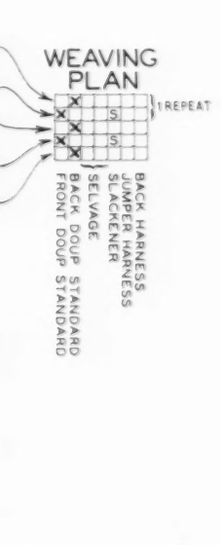


FIG. 12

open shed, however, is formed by raising the back doup standard, the ground and back harnesses in plain weave order. It is necessary to raise the back harnesses since the slotted doup needle has no control over the doup ends when the back doup standard is raised. This merely exposes the slot in the doup needle and does not bring the doup ends into the top shed, into which they must be lifted by raising the back harnesses, as shown in weaving plan at right. Thus for cross shed, raise front doup standard and for the open shed raise the back doup standard and ground and the back harnesses in the plain order. The slackener must be worked on every cross shed but no jumper motion is required, since the ground ends are weaving plain throughout. The plain weave of the ground ends brings them through the center of the shed between every pick, so that the doup needle can come up on either side.

When the plain weave portion is being woven the back doup standard is raised and remains so during the weaving of the plain portion. As previously stated, this exposes the slot in the doup needle and the doup ends are free to be raised or lowered individually by the back harnesses. With the back doup standard raised the doups are ineffective and the ground and back harnesses may be operated as regular harnesses, without douping taking place. The employment of super doup makes it also possible to weave 1 cross 1 leno and plain weave at the same time on one set of doups, merely by operating in opposition the doup and ground ends in each alternate group of leno. Thus with proper operation of the ground and back harnesses a very fancy pattern may be produced on one set of doups.

To Be Continued

Phi Psi Holds Annual Convention in Philadelphia

APPROXIMATELY 200 under graduate and graduate members of Phi Psi textile fraternity attended the annual convention at the Bellevue-Stratford Hotel, Philadelphia, Pa., April 11-13. An interesting program consisting of visits to industrial Philadelphia had been arranged, and prominent speakers participated in the affair.

On Thursday, following registration, the textile schools and industrial concerns prepared their exhibits on the roof of the hotel. Approximately 45 booths were decorated, which proved to be such an interesting part of the convention that the practice will be continued at all of the future conventions.

In the textile school classification, the gold medal was won by Philadelphia Textile School. This exhibit depicted the work of the Phi Psi boys in the textile school and consisted of many fabrics and designs. The second (silver medal) was awarded to the chapter at Alabama Polytechnic Institute, Auburn, Ala., which showed a number of Jacquard patterns and towels made from cotton.

In the industrial classification the gold medal was taken by the exhibit of the National Association of Wool Manufacturers, who showed some of the finest fabrics in the world, made of wool. The silver medal went to Carl Stohn, Inc., on a display of elastic undergarment fabrics; while the bronze medal was awarded to Rohm & Haas on its exhibit of resins for various purposes.

Friday morning the members were taken on a visit to the Chas. P. Cochrane Carpet Mill and to Continental Mills. About 50 members attended the Friday luncheon. Friday afternoon was given over to a tour of the Philadelphia quartermaster's depot of the army, through the courtesy of Major Painter, a member of the fraternity. The annual smoker was held Friday night, with the feature being a movie on counterfeit money, under the auspices of the Federal secret service. This was followed by a floor show.

The business session was held Saturday morning, with J. E. Fite, Jr., of Krout & Fite Mfg. Co., being elected president for two years; A. Kempton Haynes of Rohm & Haas vice-president for a one-year term; Donald D. Crawford, sec.; and Alec Stohn, Treas.

The annual banquet was held Saturday night with Ted Haywood acting as toastmaster. Speakers for the convention were Alban Eavenson; M. E. Heard, new head of the Philadelphia Textile School succeeding Dr. E. W. France; Col. Brown of Continental Mills; Dr. Steinmetz; and Elmer Bertolet of the Philadelphia Textile School.

Photo by John C. Fonville of "Cotton"

• It is highly important that a mill keep the employees safety-conscious at all times, both from the standpoint of efficiency by having its regular employees remain on the job instead of in the hospital, and because of lowered insurance rates that may be obtained when a good safety record is made. This sign and signal board is used at the entrance gate at the Abbeville (S.C.) Mills to remind the employees of the safety record being made by each department. This board has a system of lights that blink to catch the attention of the employee as he passes going to work. So long as there is a perfect record being maintained by each department the lights blink in amber color, but as soon as an employee is injured and must lose time from his department, the light changes from amber to red. It remains red until the employee is back on the job.

When the photograph was made there was one red light operating; only recently there had been a serious weave room accident.

The employee in overalls is J. D. Monday, mill carpenter, and the watchman is Irvin Kirby, who has worked in the Abbeville Mills since he was eight years old. He is now 44 and has served continuously with the plant, except for time out to do service in the army during the World War. He has never had an accident in the mill, so it is especially fitting that Irvin should be custodian of the safety board.

CLOTH ROOM PRACTICE

(Part Three)

By Erwin Hard

• This is part three of a series of articles on cloth room practice and management. The first two installments, appearing in the March and April 1940 issues, described general handling of cloth of various types. This article discusses employee requirements and then goes on into the more technical operation of the cloth room. The articles are prepared by experienced mill men . . . . . .

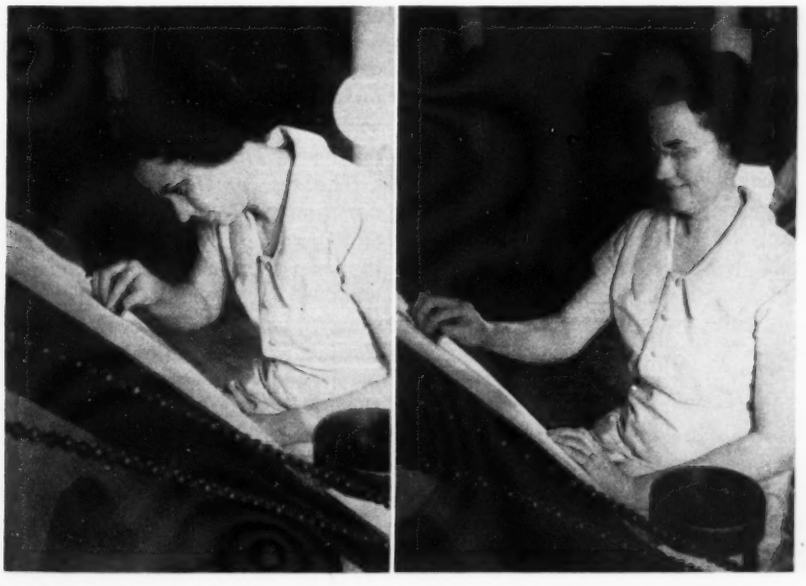
FOR MANY YEARS most of the southern mills have made an effort to provide some kind of light work for the older people in their plants who wanted to continue to work after their efficiency had dropped due to old age. Some of these people have been good weavers, fixers, spinners, winders, frame hands, etc., in their younger days. These people are usually the finest folks to be found in our mills, and are loved and remembered for the devotion they have shown in the many years of service they have rendered. The point which I am coming to, however, is that in many plants it has become too much the custom to send most of the old people to the cloth room, after age has begun to hold them back on other jobs. With all respect to "gray hairs", any of us must admit that if this practice goes too far we will not have a very efficient cloth room.

Selecting Employees

An essential requirement in the employment of cloth room workers is good eyesight. This is one department that must have workers who can see well. The writer knows of one worker who had been severely criticized about her work on several occasions, and when the overseer told her she must leave because of her careless attitude, he found to his surprise that she could not see well. He advised her to have glasses fitted, and she is now one of his best cloth inspectors. In employing inspectors and others who have to look for defects, and observe minute detail work, in the cloth room, we should always find out if they have good eyes.

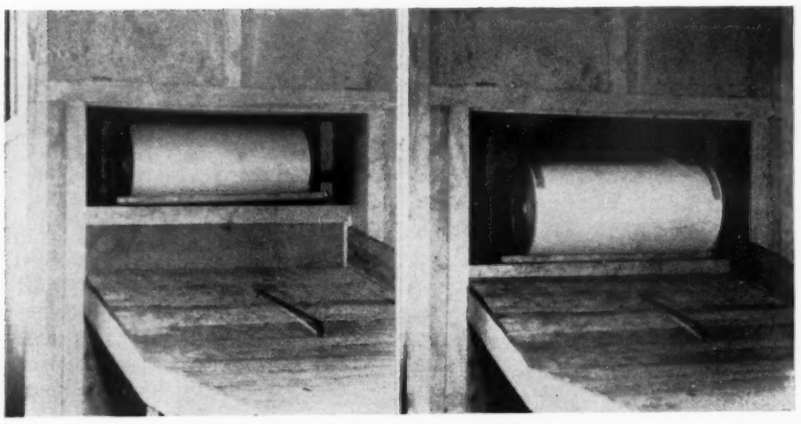
Some past experience in weaving is often helpful to employees in getting on well in the cloth room. The fact that they know how the cloth is woven is helpful. They also know the parts of the loom which are more likely to cause defects than others. If a defect shows up in the cloth they would immediately mark it as a reed mark, thread out, mispick, or whatever it happened to be without any delay in their work or the necessity of calling the head inspector. While this earlier experience in the weave room is helpful, it is not always necessary. The writer has employed girls who were reared on the farm, or worked in other industries, with no knowledge whatever of textile work, and after a reasonable training period they became splendid inspectors. A reasonable explanation of this is rather difficult, but it has been checked with the experiences of other mills and all are agreed that it is true in many individuals. It would be interesting to know that if this particular employee first learned to weave, then to inspect, if she would not get along better than if she had simply started as an apprentice inspector. My guess is that she would. Some knowledge of weaving should help the inspector to make out the report which is sent direct to the loom. (These are small reports which we use to notify the weavers immediately if they have a loom making seconds.) We could be sure she would give the cause of the defect more accurately than someone who did not know the loom.

Good health should always be a consideration in selecting employees for any department. We can-



Photos made exclusively for "Cotton" by Harry H. Purvis

The operator at the left can do first class work, but she is hampered by weak eyes. At the right, after donning glasses, she is able to work with less eyestrain, can assume a correct posture and is in general more efficient . . . . . .



Cloth elevator for lowering loom rolls from weave room to cloth room. Two rolls are placed on inclined table in front of elevator door (in weave room). First roll goes onto elevator pan and second roll is held in place by scotch. Weight of roll on pan causes elevator to descend slowly. As roll nears the bottom, the pan is tipped and the cloth rolls out on table. Counterweights raise elevator and when it reaches top it automatically releases scotch holding second roll; process is repeated. No power (other than weight of rolls) is required to run elevator. Eliminates all heavy lifting, handling of cloth, which often gets it dirty . . . . .

not expect good work from people who are handicapped by some physical deformity or disease. In the cloth room, cuts have to be passed right along from one to another, in some processes, and the work is seriously slowed up if there is someone who is not able to carry his or her share of the work because of ill health.

Education of Employees

Much of the work in the cloth room has to do with weights, yardage, styles, order numbers, and the like. This makes it necessary in selecting employees for the cloth room to check on their education. While it is not necessary that they should have finished high scoool, it has been found that those who have completed high school make better cloth room employees. It is very important that this point be watched when selecting those who operate folders, inspecting machines, adding machines, stamping tickets, and other work similar to this. Mistakes made in arithmetic, in cloth room work, can lose money for the mill, as well as place the shipping department in an embarrassing situation.

A good cloth room overseer should be very careful in selecting his employees for the various types of work so that their height, weight, etc., shall not be a handicap to their efficiency. It would be very difficult for a tall man to work on some bale presses, and equally difficult for a girl of short stature to burl cloth on an average inspecting machine. We have found that girls who are somewhat taller make better inspectors. They can see the cloth at a much better angle and do not have to stretch to burl certain places almost out of their reach. It is not quite fair to the worker, and does not make for the best quality for the mill to place employees on work with no consideration having been given to this point.

Everyone admires a worker who can do the work quickly and at the same time do it well. Careless employees cause a great deal of difficulty, no matter what the work, but the cloth room is one place where care is essential. It is very hard to ascertain how energetic, careful, or industrious, an applicant is; but the cloth room overseer should consider these things when employing his workers.

While the writer has placed the following point for consideration, last, yet it is one which should probably have headed the list; e.g., the applicant's desire for this kind of work. I do not believe that anyone can make a real success in life, no matter what the undertaking, unless he or she likes the work they have chosen. The most efficient employees are those who wanted a certain job, were able to get that job, then made good on it. If the cloth room overseer can determine whether the applicant really wants the job because they think they can do that work best, and not because they simply want a job, then he is likely to get a good worker, and one that will be satisfied. In turn the department will turn out better work and more of it.

Checking Cloth and Weighing-In

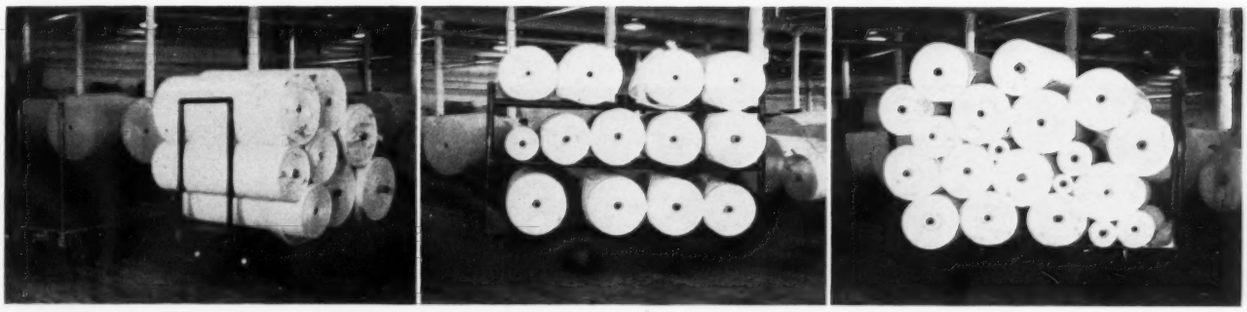
While there is no such arrangement in the mill where the writer is employed, we have seen some very ingenious and efficient methods of conveying the cloth from the weave room to the cloth room. There are several of these methods in use, most of them very simple, yet practical. Where the cloth room and weave room are so arranged that the cloth can travel by some sliding method, from the weave room down to the cloth room, not much of a conveyor is needed. Some mills simply use a wooden chute through which the cloth slides.

Where such a chute is used care must be taken to avoid torn or damaged cloth. The inside of the chute must be free from splinters, nails, or rough places. All woodwork which the cloth is likely to touch must be tightly jointed and countersunk screws used rather than nails. A high polish is obtained by the usual method of sanding and filling, then applying two coats of shellac.

Another mill uses a zinc lining in the chute. This seems to be very satisfactory. There are also some new conveyor systems which seem to work fine where they have been designed especially to fit the mill's needs. While, as we have explained, many ideas of this kind have been put into use, most mills still use some kind of cloth truck for this purpose. This is true in our plant.

The size of the cloth truck is a very important matter. Where one cloth hauler is used it may be necessary to cut the size down somewhat. However, the trucks should always be made just as large as they can be conveniently rolled. It is a good plan to have several of these trucks available so they can be placed about the weave room, as conveniently located for the weaver as possible. The weavers can put the cloth on the trucks instead of scattering the cuts about the room. This of course saves much handling.

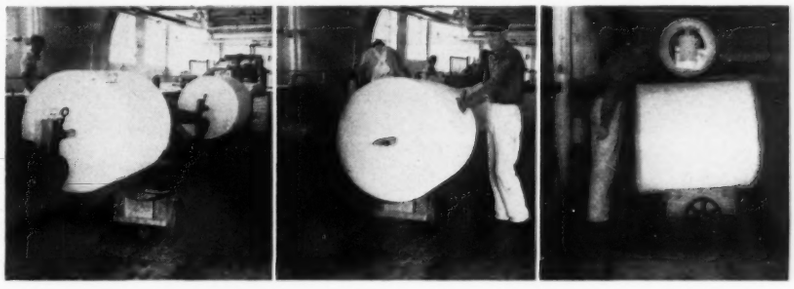
These methods of handling the cloth before it reaches the cloth



Left, small lightweight truck for transferring a few rolls of cloth. Center, section-type trucks, handy for use as supply truck. Each roll is accessible without having to move any rolls that might be on top of the roll needed. Right, heavy truck for handling large number of rolls. One mill reports that this size truck is cumbersome, heavy and requires heavy lifting to get the roll needed.

room may not appear to be of importance to the management of the cloth room, but we all agree that the more times the cloth is handled the greater the danger of getting grease, dirt, fingerprints, etc., on the cloth. The cloth room then has to sponge this out. Many times the cloth has to be cut into short lengths because of these things, and no one wants a lot of shorts and remnants.

When the cuts are received in the cloth room it is first necessary to sort the various grades. This is important because for efficient cloth room management we should have a record of the amount of cloth of each grade delivered to the cloth room at each checking, and subsequently, for the day, week, etc. Permanent racks, trucks, or tables are being used for making this division. The writer prefers trucks wherever it is possible to use them, because when the cloth is checked in on trucks it is ready to be *rolled* on to the inspectors. This always saves handling the cloth an additional time. If any department has its work correctly organized with the idea of saving time it is a great benefit to the mill.



Showing use of individual cloth roll truck. Left, the finished roll of cloth is on front of re-rolling machine, with truck nearby. Center, roll is released and tumbes onto truck. Right, roll is easily pushed to scales, is weighed and transferred to wrapping department. This truck eliminates heavy lifting and prevents rolls from ever touching floor . . . . . .

We will next take up the method of checking the cloth. One man should select a cut of cloth from the weave room truck and call the loom number to the checker. A second man, who is helping, should check the width, style, and grade. The two men then put the cut on the truck where this style goes. The checker records the information as it is called to him and repeats it for accuracy. When the checking is finished the various styles are weighed separately and the checker writes the weights down.

Alabama Meeting

(*Continued from page 77*)

was the address by Mr. Johnston, who discussed means of increasing consumption of cotton and its products, and told of the efforts and achievements of the National Cotton Council in this direction. Joe L. Jennings, of Fairfax Mills, presented prizes to the winners in the golf tournament, as follows:

Low Net, Mill Men, loving cup, cocktail shaker and goblets: W. C. Sandlen, of Russell Mfg. Co.

Low Gross, Mill Men, golf bag; William Pennington.

Low Net, guests, wind breaker jacket; S. W. Quisenberry, E. I. duPont de Nemours & Co., Atlanta, Ga. (Mr. Quisenberry was tied for low net with E. V. Wilson and Robert W. Philip, winning the draw.)

Low Gross, guests, zipper bag: Louis Kirby, Lanett, Calco Chemical Division of American Cyanamid Co.

High Gross: badminton set: J. D. Johnson, American Moistening Co., Atlanta, Ga.

Lowest score on par 3 holes, one dozen golf balls: Erwin N. Darrin, Draper Corp., Spartanburg, S. C.

A special prize for the golfer with the closest tee shot on the shortest par 3 hole, a table tennis set, was won by R. A. Wells, Bemis Bro. Bag Co., Talladega.

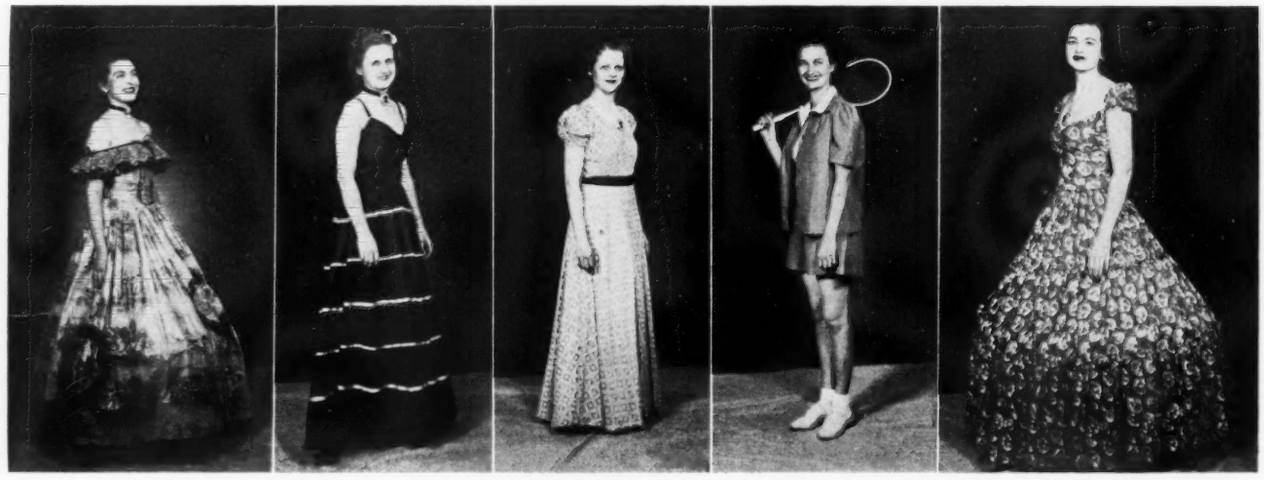
Just before the Banquet, **Joe L. Jennings,** who ably conducted the golf tournament, snapped in a Battle House corridor.—(Photo by **P. G. Wear**) . . . . .

These prizes were purchased and presented by a group of salesmen and other guests of the association.

Each lady attending the banquet was awarded an attendance prize, including products of Alabama mills and special prizes furnished from the golf prize fund. A high spot of the evening was the presentation, by John V. Denson of Opelika, of a watch, on behalf of the association, to R. W. Jennings, superintendent of Lanett Mill, Lanett, Ala., the association's first president since its re-organization, and chairman of the board of directors for the past year.

The convention was concluded with a session on Friday morning, which was devoted to committee reports and other association business, and a luncheon of the new officers and board of directors Friday noon.

The Pepperell Style Show at Rome, Ga.



Five of the Lindale girls who served as models in the Pepperell style show

AN AUDIENCE of more than 4,000 witnessed the style show and display of new textile fabrics staged in the Rome (Ga.) auditorium on Friday evening, April 12, by the Pepperell Manufacturing Company, of Lindale, Ga. The event, which was repeated on the following evening, was one in a series of such fashion shows conducted this spring at the different Pepperell plants; there being one at the Opelika (Ala.) plant on Thursday evening, April 18.

In the Rome event, as in the other Pepperell shows, girls from the Lindale mill and village served as models, making most favorable impressions with their beauty, grace and style. The show took the form of a dramatization of 'round-the-clock fashions, with several other special features to display fabrics of the mill utilized in striking manner in different uses. Household fabrics, informal and formal apparel for women and men, were prominently featured.

An appropriate musical program was presented, with entertainment provided by R. Donald Harvey, manager of the Lindale plant, for the participants and prominent guests. The lobby of the auditorium presented an attractive display of the complete line of Pepperell fabrics and products made from them.

The accompanying photographs of the event illustrate a few of its features and show the many types of fabrics modeled.

(Below) A view of the finale ensemble of the Pepperell fashion show at Rome, Ga., on April 12

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F. G. Hall Paid Tribute by Stein-Hall Employees on 50 Years of Service

The typical American success story of the office boy who worked his way to the top was told again when the officers and directors of Stein, Hall & Co., Inc., paid tribute to the golden anniversary of the association of Frank Griswold Hall with the organization. Mr. Hall is now president of Stein, Hall & Co., Inc., but it was just 50 years ago last April that he became office boy in the company that he now heads. The testimonial banquet was held at the Waldorf-Astoria Hotel in New York on April 6, where W. W. Strasser, vice-president, presented Mr. Hall with a gold loving cup and a set of engrossed resolutions which extolled his invaluable services for the company. Mr. Hall had already marked his golden anniversary by presenting to every employee of the company in this and foreign countries a gold pencil in token of his deep appreciation for their cooperation in building the company's success.

Record Crowd Enjoys Meeting at White Sulphur Springs

American Cotton Manufacturers hear Lewis, Hanes, Jordan, Murchison and Rose; Fred Symmes is new president. Banks and Cannon vice-presidents.

KEMP LEWIS took his fellow southern cotton manufacturers and their guests to White Sulphur Springs, W. Va., last month, for a splendid outing that provided three days of recreation and fellowship, and an enjoyable and restful atmosphere for the consideration of the industry's problems. The occasion was the 44th annual convention on April 25, 26, and 27, of the American Cotton Manufacturers Association, of which Mr. Lewis is the retiring president. The importance of the occasion attracted perhaps the largest attendance in the association's history; the program and the delightful setting of the convention, at the Greenbrier, at White Sulphur Springs—made the affair a most delightful and stimulating event. There were more than 600 registrations, and a well-balanced attendance of ladies.

Fred Symmes New President

In the business session of the convention Fred W. Symmes, of Greenville, S. C., was named president of the association succeeding Mr. Lewis, who is president and treasurer of the Erwin Cotton Mills Co., Durham, N. C. (See biographical sketch and character study of Mr. Symmes on page 55 of this issue of COTTON.) In normal succession, Robert R. West, who recently left the industry by his retirement as president and treasurer of the Riverside & Dan River Cotton Mills, Danville, Va., was in line for the presidency, but he declined the designation, and Mr. Symmes, who has been second vice-president of the association, was named to succeed Mr. Lewis.

William N. Banks, of Grantville, Ga., was elected as first vice-president. Mr. Banks is president of the Grantville (Ga.) Mills, and the McIntosh Mills, Newnan, Ga.; and sales director of Habersham (Ga.) Mills. He is a past president of the Cotton Manufacturers Association of Georgia.

Charles A. Cannon, president of Cannon Mills, Kannapolis, N. C., was made second vice-president of the association. He is a past president of the Cotton Manufacturers Association of North Carolina, and was a member of Industry Committee No. 1 under the Fair Labor Standards Act of 1938.

The following were named to three-year terms as members of the board of government:

Harvey W. Moore, secretary, Brown Mfg. Co., Concord, N. C.; George P. Swift, vice-president, Muscogee Mfg. Co., Columbus, Ga.; Geo. M. Wright, president, Republic Cotton Mills, Great Falls, S. C.; Stuart W. Cramer, Jr., president, Cramerton Mills, Cramerton, N. C.; Fuller E. Callaway, Jr., president, Callaway Mills, LaGrange, Ga.;

K. P. LEWIS, the retiring president of the Association . .

and R. C. Moore, Rhodhiss (N. C.) Mills, succeeding Mr. Cannon.

W. M. McLaurine was re-elected as secretary and treasurer, a position he has held since 1927.

The officers and board of government held its pre-convention session on Thursday, April 25, discussing the affairs of the association. The first general session of the convention was held on Friday morning, April 26. Following the opening formalities, Mr. McLaurine presented his report as secretary-treasurer, reviewing the activities of the association during the past year, and stressing those services it renders to mills of all types and sizes within the industry, and to the industry as a whole.

Address of K. P. Lewis

Mr. Lewis next presented the annual report of the president. He first reviewed in detail the efforts of the association, in the summer of 1939, in connection with the wage-hour hearings under the Fair Labor Standards Act, declaring that the uniform 32½ cent minimum applied to the entire industry last Fall was unfair to the South, and showing that it is extremely illogical for two branches of the government (WPA and Walsh-Healey) to allow a southern differential, and for another branch to dismiss the claim for a differential with the statement that there is practically no difference in the cost of living. He deplored the obvious bias of the committee, as constituted, and recommended changes in the law, saying "I feel very strongly that the law should be changed, and that if a minimum is adopted it should establish only one minimum rate, not too high, but sufficiently high to prevent sweatshop conditions, and that there should be no administrator, industry committee or any other commission with the authority to change this rate."

Mr. Lewis reviewed the struggles and progress made in the South, along economic and sociological lines, and plead for more sympathetic understanding of its problems.

He discussed in detail the proposed new processing tax, under the name of a certificate plan, and urged more interest on the part of southern congressmen and senators in defeating such types of legislation.

New Institute Policy

Discussing the necessity for controlling production, Mr. Lewis said that "merchandising is the greatest weakness in our industry, for which we, as operators of the mills, must be held responsible." He expressed hope that the government's suit against the print cloth group, because of their efforts to control production and merchandise it in an orderly manner, would be abandoned. "This plan was carefully thought out by able men," he said, "and was one of the most constructive co-operative movements in the history of the industry. If this suit goes against the committee, and anything in the way of co-operative effort is banned, it leaves it up entirely to the individual to handle his own problems. Accumulating tremendous stocks of merchandise simply hands the market over to the buyer. Our curtailments in the past have nearly always come too late."

Mr. Lewis paid high tribute to The

Cotton-Textile Institute, under the leadership of Dr. Murchison. He disclosed that at the time of the wage-hour hearings in 1939, the policy of the Institute prohibited it from taking a definite stand, but that since, "that ruling has been changed, and the Institute is free to advocate and fight for whatever the majority of the membership desire."

The Association president concluded on a philosophical note, reporting progress made in this rapidly changing world by other industries in the field of research and new products. He urged that cotton-textiles give more consideration to research, and plead for a closer working together to "hold to our faith, and improve our own lives, and in this attitude fight against any tendency toward any totalitarian form of government which takes away the precious liberties for which those who have gone before have bled and died."

W. N. BANKS, of Grantville, Ga., elected first vice-president . . . . . .

Robert M. Hanes, president of the Wachovia Bank and Trust Co., Winston-Salem, N. C., and president of the American Bankers Association, followed Mr. Lewis as the first guest speaker. Mr. Hanes' subject was "The Objectives of Organized Business", and he told in detail what the American Bankers Association is doing in the way of co-operative and unified research activity and service. He urged that textile manufacturers work more closely with their trade associations, saying in part:

"The greatest need of organized business today is a long range point of view. American business and financial institutions did a grand job from the economic standpoint in building up this country. In a real sense they performed a great service in creating the American standard of living. But in the past they have overlooked too much the public reaction to their activities. Too often have corporations been overconfident of their position and unmindful of public opinion. Happily, that situation is changing. The social significance and purpose of business is being increasingly recognized by business itself, and modern business policies are being evolved in terms of public interest. It is only through voluntary co-operation by business units in the same field that broad knowledge and effective policies can be evolved. To promote this co-operation in terms of long range programs is the function of organized business."

Virgil Jordan, president of the National Industrial Conference Board, was the concluding speaker on Friday morning's program. He discussed "The Reconstruction of American Enterprise", reviewing developments in government and business during the entire history of this country, and pointing to the changes in these and other spheres that must be made to restore completely the American way in business and politics.

Murchison on Conditions

The first speaker at the Saturday morning session was Dr. Claudius T. Murchison, president of The Cotton-Textile Institute, who reported optimistically on the legislative prospects in Washington, where, he said, the forces of constructive conservatism are sweeping forward. Pressure for new legislative experimentation has vanished, he said, with every indication of more fair play and equity toward the country's business interests. A growing sentiment for administrative efficiency and justice in the regulation of business has found expression, and "we have good reason to expect that both major parties will lean to the right in the forthcoming campaign." There has been a diminishing pressure for a processing tax on cotton, the speaker said, but the danger must not be regarded as completely over. "Should favorable action by the conferees on the agricultural supply bill (calling for $212,000,000 for parity payment) be unobtainable, the danger of a processing tax will be immediately renewed. Until this danger has completely disappeared, the industry will not relax its watchfulness or its resistance."

DR. MURCHISON, president of the Institute, who spoke at White Sulphur Springs . . . . .

Dr. Murchison was optimistic for the business future, declaring that the cotton-textile industry occupies a statistical position which gives no cause for misgivings. "In the Spring of 1937 mill stocks were extremely light and unfilled orders were high, but at that time the element of weakness in the situation was the accumulation of enormous inventories in the hands of the industry's customers. There are no parallel features to this situation today. There are no burdensome stock accumulations among the industry's immediate customers or among the distributive trades including the retailers. * * * I am convinced that there is greater prudence in the administration of mill policies today than there has been at any time during the past five years. Individual mill executives are being governed as never before by the collective facts of the various groups to which they belong.

"With all of the associations of the industry determined upon this policy, the industry may for the first time envisage ahead the great level plateau of stability and prosperity rather than the hills and valleys of booms and depressions."

Dr. Murchison concluded his address with references to the impending National Cotton Week, stressing the value of the co-operation being received by the industry from the members of distributive organizations, such as the Institute of Distribution whose members, with 15,000 stores, purchasing more than $800,000,000 worth of mill products annually, are whole-heartedly participating, as last year, in the industry's promotion efforts.

Rose on Research

Robert E. Rose, director of the technical laboratory of the dyestuffs division of E. I. DuPont de Nemours & Co., Wilmington, Del., also spoke Saturday morning to the cotton manufacturers, on the subject of research, making a report for the Textile Foundation. He urged the industry to study the work of the Foundation, which is not self-perpetuating. Its textile laboratory, he said, may soon disappear if it does not secure proper support. This project which, he said, costs actually only $20,000 a year for cotton research, "can only continue if it is supported by the active participation of yourselves. I urge upon you the necessity for you to carry on research in your own interests unrelated to the group of suppliers of textile materials and equipment.

MR. McLAURINE, who was re-elected as secretary-treasurer . .

"Research is not a production matter; you cannot go to your laboratory and say 'We have orders for such and such new product, we expect you to make it in time for delivery 60 days from now.'

"The results of research are like choice liquors, they are useless until needed and they cost a lot but when they are wanted they must be available, they cannot be produced overnight."

Dr. Rose urged the industry specifically to consult Dr. Milton Harris, in charge of the research work of the Textile Foundation and obtain from him an idea of the importance of the work. "I honestly believe," he said, "that I am trying to make you a present of gold dollars for a few cents each. Consider the investment as the installation of a small piece of up-to-date equipment and you will see how very small the risk—the profit, if you have the patience, will speak for itself, and so vehemently that the date at which your support made certain the continued life of this laboratory will come to be known as a most significant one in the history of American cotton mills."

R. E. ROSE, of du Pont, who spoke on the need for organized research . . .

At the conclusion of Dr. Rose's address, Fuller E. Callaway, Jr., who long has advocated organized research for the industry, asked the speaker to indicate the amount of man-power and money devoted by Dr. Rose's company to research. Answering in general terms, Dr. Rose said that DuPont has at least 800 men engaged in research, and spends at least $8,000,000 annually in this direction. Mr. Callaway repeated the figures, emphasizing that they are the investment of only one company, and declaring that the entire cotton-textile industry, with 1200 companies, probably spends less annually than the amount represented by Dr. Rose's salary alone.

Reports were heard from the association's several standing committees. After the election of officers, as previously reported, Robert E. Henry presented to Retiring President Kemp Lewis, on behalf of the association, a handsome silver service set in appreciation of his work as head of the organization.

Golf, Skeet Tournaments at White Sulphur Springs

OF INTEREST and importance at the A.C.M.A. convention at White Sulphur Springs were the entertainment and recreation, formal and informal, during the meeting. The organized entertainment included a golf tournament, a skeet shooting tournament, and the annual banquet, held on Friday evening with President Lewis as toastmaster. Harry Hirschfeld, noted New York humorist, was the featured speaker at the banquet, but unhappily, the size of the crowd and failure of the public address system prevented delivery of his full speech. A very operatic double quartet from Charlotte, though, was able to make itself heard in several popular numbers.

The Association's golf tournament was staged on Friday afternoon, under the direction of James D. Sandridge, of Charlotte. It was a handicap affair, with prizes for net and gross scores. Among the mill men, W. H. Ruffin, Jr., secretary of Erwin Cotton Mills, Durham, won low gross prize, a set of registered irons. Ernest Rees, Jr., of Fayetteville, Tenn., won first low net for mill men—a golf bag; and F. S. Nicholas, of Abbeville (S.C.) Mills, won four matched woods with second low net score among mill men.

F. C. Alexander, of Greenville, shot the low gross score among non-mill men, winning a set of irons. E. V. Wilson, of Spartanburg, won first low net prize for this group—a golf bag; and Erwin Walker, of Greensboro, won a set of woods, the prize for second low net.

N. M. Mitchell won an umbrella, the prize for the blind bogey; Luther H. Hodges, of Spray, received a club for having taken the smallest number of putts; and J. G. Gaw received a prize for having the highest score on the par three holes.

In the skeet tournament, held on Thursday afternoon under the direction of Joe Moore, of Charlotte, the Moore family monopolized the event. Joe Moore won first prize, a silver tray; A. P. Gumaer, of New York, won second prize, a serving tray, and also a gun case for the best score in a group. Harvey W. Moore, of Concord, won third prize, a silver platter; Walter W. Gayle, of Charlotte, a gun case for fourth prize; R. C. Moore, of Rhodhiss won fith place; and J. D. Sandridge, of Charlotte, sixth prize.

An unexpected entertainment was provided the delegates by the annual U. S. open tennis tournament, in its final stages at White Sulphur Springs during the convention, so that the mill folks were privileged to witness Don Budge, Vincent Richards, and other top-notch tennis performers in this contest.

Learning by Seeing

An up-and-coming section foreman in one of the coal producing companies in the Appalachian field prided himself on the orderliness and the safety with which he maintained general operating conditions in his section. A while back, however, he got the idea that it was a mistake to be too well satisfied with conditions in his own section. So he asked the superintendent if he might inspect several other sections of the mine to see what he could learn to apply in his own section.

His inspection trip brought to his attention a number of things that he could apply in his own section. He wrote up a report on what he had seen and how he was going to use these ideas to improve his own section. His report made the sectional inspection idea appear so worth while that the superintendent inaugurated the idea for all section foremen.

The results of this plan have been very satisfactory. Not only has each section foreman picked up ideas which he could bring back and apply in his own section, but the very fact that each section foreman knows that his area will be subject to periodic inspection by other foremen makes him much more particular about seeing that conditions are kept as orderly and as safe as possible.

This intersection or interdepartmental inspection idea is one that will work in an organization of any industry. Why not try it out in your outfit?—"*Management Information*", *Elliott Service Co., Inc.*

Workers' Pet Peeves

"That guy must think I'm some kind of a mind reader," sputtered a man to a fellow worker after taking a bawling out from his foreman for not doing a job the way the foreman wanted it done. "He told me to do the job and I did it just the way I always had done it before. Then he came around and got tough with me because there was some change in the job that he wanted to make. But, he hadn't told me about any change!

"Then he asked me why I didn't ask some questions. But, why should I ask him questions about a job that I thought I understood perfectly? Maybe he has got a lot on his mind and just takes it for granted that we know everything. But, if we go ahead and do something the way we think we're supposed to, and it's different from what he's got in his mind, then he flies off the handle.

"Nine times out of ten if you ask him questions, he looks at you as if you were a dumb-bell. A fellow never knows when he 's doing the right thing with a guy like him for a boss!"

Are your instructions always clear and complete?—"*Management Information*", *Elliott Service Co., Inc.*

Bill Kirby of Penick & Ford, Ltd., is seen peeping among some of Mobile's famous azaleas which were in full height at the convention. (Photo by **P. G. Wear**)

Alabama Men Meet in Mobile During Azalea Season

STIMULATING addresses, a congenial attendance and a beautiful setting combined to make the second annual convention of the Alabama Cotton Manufacturers Association, in Mobile, Ala., on Thursday and Friday, April 4 and 5, a profitable and enjoyable occasion. This association, re-organized just two years ago after several years of inactivity, has made remarkable progress and now has all but six of the mills of the state on its membership rolls.

A large attendance was drawn to Mobile by the program, and the attractions of the famous Bellingrath Gardens there, and the setting of the meeting dates at the height of the azalea season.

Paul A. Redmond, president of Alabama Mills, Inc., Birmingham, presided at the sessions, assisted by Dwight M. Wilhelm, of Montgomery, full-time secretary of the association since its re-organization.

Joe Lanier New President

Joe L. Lanier, of West Point, Ga., president of the Wehadkee Yarn Mills, Rock Mills, Ala., was named president of the association at Mobile, succeeding Mr. Redmond. Benj. C. Russell, vice-president of Russell Mfg. Co., Alexander City, Ala., was made vice-president, and J. Craig Smith, vice-president of Avondale Mills, Sylacauga, was elected treasurer.

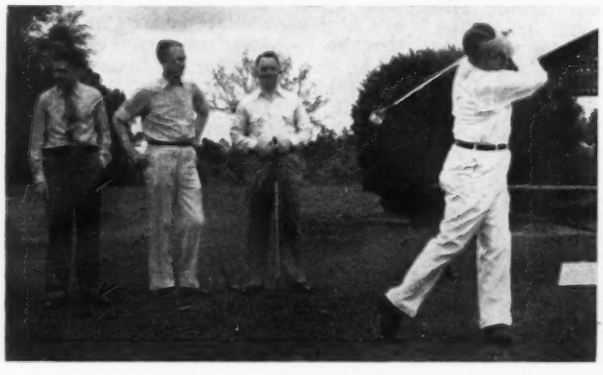
Outstanding addresses at the convention were delivered by Mr. Redmond, Oscar Johnston, president of the National Cotton Council, Inc., and Claudius T. Murchison, president of The Cotton-Textile Institute, Inc. Particularly significant were the remarks of Dr. Murchison, who spoke encouragingly of future business prospects in the textile industry, and advocated a startling change of policy on the part of the industry. As to business prospects, he unqualifiedly predicted that American business as a whole, regardless of which party wins the presidential election in November, is on the threshold of "an era of prosperity greater than any we have previously known."

In connection with the national political scene, Dr. Murchison declared that the "outlook is becoming more favorable. A spirit of tolerance is coming to the front. The concept of reform seems to be undergoing a change. Everywhere men are sticking their necks out without losing their heads. Not infrequently, we find a good word being said for the business man as a necessary part of the social and economic system. So, regardless of which party wins, there seems in the making a change of political judgment, a shift to the right, a change toward equity, equality and economic realism."

Speaking of conditions in the cotton-textile industry, the Institute head presented a clear analysis of the present situation. "During the past two months," he said, "the industry has suffered one of the most abrupt and most severe price declines in its entire history, that is, for so short a period. To be sure, things have not become so bad as they were in 1938 or the first part of 1939, but the very spectacular market weakness has created in the minds of many men a feeling of anxiety and fear, so I think it would be very much in order to consider the validity of those fears.

"I do not find in the present situation the elements of weakness which existed in the previous decline. The chief contrast is the absence among the distributors and among the secondary processors of the large stocks which they held immediately preceding the former decline. Stocks, generally speaking, throughout the country are sub-normal. It is perfectly absurd to assume that a period of three or four months of super-normal sales and shipments, following a period when stocks were extremely low, could have brought those stocks up to normal and at the same time met an enormous increase in consumer demand and be able to build up big surpluses." Dr. Murchison admitted that during the previous two months, production had run ahead of sales, but that gains in inventory had been small, as indicated by the extraordinary sensitivity and strength in the market during late March and early April.

The speaker urged, in view of the favorable statistical position, that the industry maintain a stiff backbone and a courageous attitude in its merchandising operations. He declared the terrific price decline in early 1940 to be indefensible, and said that "if the industry will maintain normal operating schedules and will only have the patience to step out of the market, that in itself would be an adequate remedy. If a strong merchandising attitude is not sufficient, then take whatever steps are reasonable from the standpoint of the individual enterprise in adjusting production to the needs of the moment."

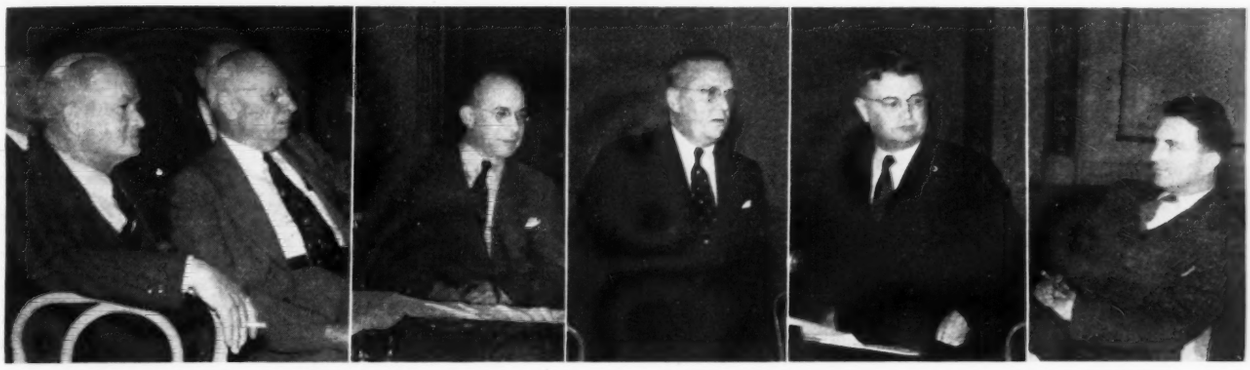


In this Mobile snapshot, **Joe L. Jennings**, who conducted the golf tournament, is shown driving off into space. The others are, left to right: **Erwin N. Darrin**, of Draper Corp.; **Jesse W. Stribling**, of Universal Winding Co.; and **Louis Kirby**, of Calco Division, American Cyanamid Co.

Advocates Individual Action to Replace Collective Action

At this point, Dr. Murchison presented a startling recommendation, in the face of previous efforts in the industry. He said:

"I think the time has definitely passed when the various groups of the industry can get together and talk



Listeners and Participants at the Thursday morning business sesssion, left to right: **S. M. Smith**, of Frank G. North, Inc., and **R. W. Jennings**, superintendent, Lanett (Ala.) Mill, and past president of the association. **Claudius T. Murchison**, president of The Cotton-Textile Institute, one of the speakers. **Roland H. Gray**, of Goodyear Decatur Mills, responding to the address of welcome. **Paul A. Redmond**, president, Alabama Mills, Inc., presiding as president of the association. **Dwight M. Wilhelm**, secretary of the association—the busiest man at the convention . . . . . .

about a program of collective action. In the first place. it isn't legal under the present interpretations of the anti-trust laws, but even more important than the illegality of that action is the recognition we have been forced to, that such a program on its very face is an impossible thing if it presumes uniform response to a program of collective action.

"It takes a good deal of courage for me to make that statement, because it makes me take a position of inconsistency as related to my own past experience in this industry and every group of it, but when certain programs have been tried time and time again, having behind them all the sincerity and all the effort and all the devotion of leaders in the industry, with all of the trade association officials and everybody going along to try to put it over, and when these things have failed most invariably, it is time to begin thinking in different terms.

"But those different terms are not terms that produce a different result, because I think now we have got to consider this: that as between the high-cost mill and the low-cost mill, there is a very wide disparity; a price profitable to Mill A represents a loss to Mill B. We not only have the disparity between costs of operation, we also have wide differences in the financial powers of the various mills, and so you will have here in one case a mill organization which is not only a low-cost unit, but a unit of great financial strength. They will continue production when other mills will find it advisable to curtail, and if the low-cost mill does not wish to go into the market, they can say, 'We can hold these stocks', and they can afford to act accordingly.

"I believe that the industry should begin thinking of meeting these problems, not through collective action, but through individual adjustment to the position of a particular mill relative to the industry as a whole, and if that particular mill finds it advisable to make drastic adjustments in production or inventory, it is the responsibility of the mill, and the wisdom of the judgments used by the individual mill will determine the welfare of the group as a whole, and I do not believe we can possibly escape that conclusion and that policy so far as the industry as a whole is concerned. But it is an attitude which puts upon the individual mill management a much greater responsibility."

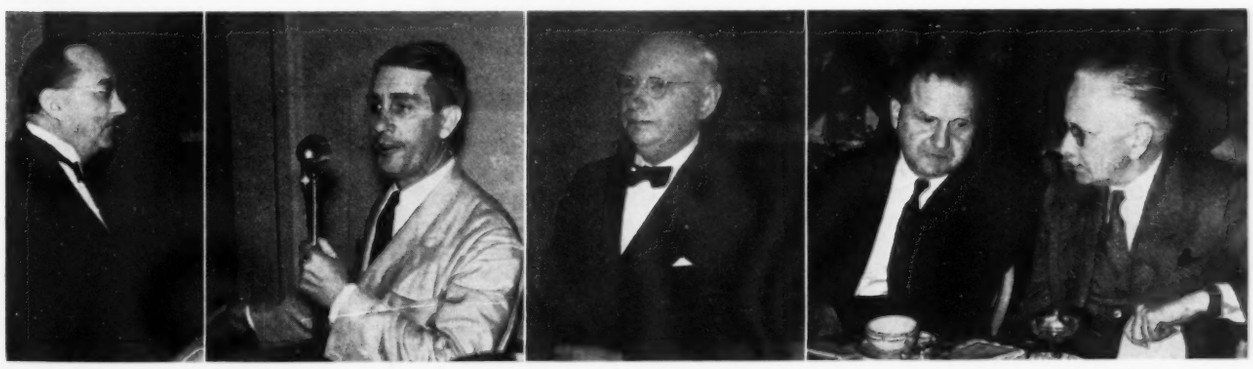
In his report to the association as retiring president, Mr. Redmond presented an account of the activities of the organization, and reviewed developments in the industry generally, and particularly with reference to the situation in Alabama. He especially urged action to reduce Japanese competition, and a relief from government interference in business. He discussed in detail changes that are occurring in the Alabama legislative and governmental situation, and urged closer co-ordination between the state's mills in working together, through the association, on matters affecting the welfare of the industry and its people.

William Ivey, of the department of industrial relations of the state, delivered a paper on the activities of that department, prepared by the director, Judge John D. Petree.

Thursday afternoon was devoted to entertainment and recreation, many participating in the association's golf tournament; others enjoying the tours of the Mobile gardens and flower displays.

The inimitable Hugh M. Comer, vice-president of Avondale Mills, was toastmaster at the annual banquet on Thursday evening. The chief feature

(*Continued on page* 71)



At the Banquet in Mobile, left to right: **Oscar Johnston**, president of the National Cotton Council, a featured speaker. **Hugh M. Comer**, of Sylacauga, who was toastmaster. **Captain Rube Jennings** as he received the gold watch awarded him by the association. **Sam Steere**, head of the Goodyear Mills, listening to **G. Arthur Cook**, treasurer of West Boylston Mfg. Co. talking, probably, about tire cord . . . . . .

Eastern Carolina Division Meeting at Raleigh

NEARLY 150 men were in attendance at the spring meeting of the Eastern Carolina Division of the Southern Textile Association, convening in the assembly room of the new textile building at N. C. State College, Raleigh, N. C., on Saturday morning, April 27. After the invocation W. H. Miley, vice-chairman, who was in charge of the meeting, introduced T. R. Hart of the textile school faculty, who gave a hearty welcome to the group, after which he told of the outstanding features of the new building and extended an invitation for everyone to inspect the building after the meeting. Colonel J. W. Harrelson, Dean of N. C. State College, gave an inspiring talk regarding the new building and its true purpose, that is in serving the textile industry as a whole through its experimentation with regard to the latest methods and procedures and in training more and better men for this work.

Running Dyed Stock

W. H. Miley, Jr., superintendent, Erwin Cotton Mill Co., No. 2, Erwin, N. C., began the discussion by asking the question "why do raw stock dyed colors run worse on long draft carding and spinning, than stock that has not been dyed? In regard to: (a) Bad drafting and (b) lap ups on leather as compared to cork rolls and (c) breakage?" It was agreed upon that this question could be discussed more effectively as a whole rather than in part as worded. G. L. McDonald, Franklinton, said that he has found that raw stock colors run just as well as undyed stock and that the breaking strength of the yarn depends upon how the stock is dyed. The only difference P. B. Parks, Jr., Erwin (N.C.) Mill No. 5, has found in running the colored stock is that it is harder to see, not that it runs worse.

In running 3 to 6 colors, Mr. Gurley, Rosemary Mfg. Co., Roanoke Rapids, N. C., finds that the dyed stock runs just as well as white goods, and the yarns are just as even. Mr. Lyles, Roanoke Rapids, asked Mr. Parks what type of rolls he was running, to which Mr. Parks replied that he uses nothing but cork, although he has had other types, including leather, cork and plain steel and found that when the white stock runs bad the colored does also. Mr. Gurley, who has long draft, stated that his colored work ran good but occasionally lap-ups appeared. At this point in the discussion Mr. Parks made the suggestion that probably reasons for the trouble that some people seem to be having with dyed stock is that the action of the chemicals weakens the fibers, or the dye is not properly neutralized, or the boiling may cause the natural waxes to be destroyed.

J. E. McGee, Rosemary Mfg. Co., Roanoke Rapids, N. C., has found that sulphide dyes will destroy natural materials and that by applying common table salt the sulphides neutralize better. Chemicals can be neutralized by applying other chemicals, also.

MR. MILEY, the new chairman of the division . . . . . .

MR. GILLIAM, vice-chairman, elected at Raleigh . . . . .

Mr. Miley brought in the question of whether or not the chemicals would wash out if the cotton were not sulphur dyed, to which Mr. Parks replied that the chemicals are not soluble, do not want to come out, and will stick fast to the cotton. Mr. Gurley asked what causes some colors to run heavier than others and if it were due to the dye stuff. J. V. McCombs, Raleigh, N. C., stated that he lightened his laps on colors that were running too heavy but has found that no one color runs any heavier than the others. He added that some mills use inferior cotton in colored work, thus causing the breaking strength to fall below the average. In such cases the dirt and impurities should be cleaned out before the stock is dyed.

Considering the matter of what procedure to follow in case the dyed stock is running bad, Mr. Parks said he would first see if the dyer had changed his formula, then check on the carder to see if he had made any changes in the set-up. If the stock appears too dry it might be advisable to add a little oil. The best method in checking on this is to simply feel the stock; if it is too dry it will be springy, and by feeling the cotton one can tell whether it will run. D. F. Burns, Durham (N. C.) Hosiery Mills Co., wanted to know how long dyed stock is allowed to age before it is run. Mr. McGee said that he has had experience where it was run in six hours and other vats not until two weeks after dying, and it is generally found that the stock runs better after aging.

Oil Spray

The next question dealt with the use of oil spray on cotton, the best methods and place of application, whether it affects the life of top rolls in carding and spinning processes, the percentage of oil to be used. B. F. Aiken, Erwin Mills No. 5, Erwin, N. C., uses oil spray on all his cotton, applying it in the blending hoppers in the opening room. He finds that it helps settle the dust in the card room, causes the cards to strip better and keeps down static electricity. He does not see that it affects his top rolls at all. D. E. Long, Oxford (N.C.) Cotton Mills, asked Mr. Aiken if there is any advantage or disadvantage in applying the oil in the conveyor line or under the beater box of the picker, to which Mr. Aiken replied that he had applied the spray in the pipe between the opening and picking rooms and found that it didn't work so well here as the cotton tended to collect dust, stick in pipe and let out lumps at times. When asked by Mr. Gurley if the cotton will clean as well after the oil is applied in blending hoppers, Mr. Aiken said it would. Mr. Oldham, Erwin Cotton Mills, Erwin, N. C., gave his experience of putting the spray right behind the beater box, underneath the feed roll, adding that the result was not so favorable here as the oil was not given time to soak into the cotton. The cotton should absorb the oil before it reaches the cleaning units. He stated that he had also applied the oil spray under the beater box, but it didn't work so well at this point because the cotton had a tendency to lap up and choke up.

Reported exclusively for "Cotton" by H. Grady Lyon, Erwin Cotton Mills Co., Durham, N. C.

Mr. Miley asked if anyone had ever applied the oil in the vertical opener. Mr. Parks had done so but said that he had found out very quickly that this was not the place to apply it. Cleaning was lost here because dust accumulated and caused the opener to choke up. He stated that they now use it in the blending hoppers and get good results there, for in accordance with the speed of the hopper the speed of the pump increases or decreases, the spray stopping when the hoppers stop. He added that the oil spray causes the linters in low grade cotton to settle in the card room, eliminates an excessive amount of dust and it does not interfere with the cleaning. As for being able to prove ends down per spindle on cotton that is not oiled, by test, he does not see any difference.

Mr. James

Mr. Lanier

Mr. Harden

Oil Spray Test Reported

D. F. Lanier, Oxford (N.C.) Cotton Mill, entered the discussion at this point to say that he had trouble with his oil-sprayed stock gumming in the beater box and around the cage screens, requiring cleaning every few days. He has changed to the gravity system, using about .4 per cent oil and gets better results in the cleaning, although the oil seems to affect the leather top rolls by causing them to pack and crease, which affects the drafting on the yarn. Mr. Parks suggested to Mr. Lanier that, since leather cannot be buffed, he get a small lathe and turn down his rolls so as to cover them with 5/8-inch cork; then, if they slick up and groove, they may be buffed very lightly. He added that although this suggestion might sound like an expensive one to follow, in reality such a procedure costs very little. A. R. Marley, Erwin Mills No. 6, Durham, N. C., stated that, although he is not using oil spray at the present time, at one period he ran extensive tests on this, carrying it through carding, spinning and spoolers, making over 500 sizings and breaking tests. The yarn showed better breaking strength and was certainly more even. The oil was applied just as the cotton left the opening machines and this gave good results. Mr. Long explained that the gravity feed bar runs the length of the beater box, and as the cotton comes from underneath the feed roll the oil is wiped off the bar. He believes that by using oil the work is made more susceptible to humidity changes. Mr. Miley said that his company at one time applied the oil in 8 bale breakers whereby 1/8 of the oil went into each machine; however, the present set-up on the 27 blending hoppers is a better one as 1/27 of the oil goes into each hopper, and there is no trouble in applying it at this point. The general consensus of opinion was that the farther back the oil is applied the better it is, although it was generally admitted that each company should deal with this procedure as an individual problem and fit it to individual needs.

Long Draft Roving

The next question was centered around variations in yarn numbers made from long draft roving. Mr. Moore, Roanoke Rapids, has secured as smooth and even a yarn from long draft and a little bit better breaking strength, from 5 to 7 per cent better. Mr. Gurley reported more variation from long draft, around 2½ numbers having been found at times on 14.5s yarn. This might be caused by a singling on the drawing frame or bad creeling. He believes that on the whole the yarn is better even though variations may occur. M. R. Harden, Erwin Mills No. 4, Durham, N. C., believes that the continuous strand of yarn inch to inch is better on long draft than the conventional type. It looks smoother and runs better. The hard part about long draft is that there are no doublings.

W. T. Byrd, Erwin Mills No. 1, Durham, N. C., said that he has been running long draft over two years and still has things to learn. Everyone must study out his own individual condition. He starts in the picker room and keeps close check on his lap weights. The drawing frame should be kept clean and rollers rebuffed. It is important to have the proper draft on speeders, his ratio being 3 to 5. On the back process he has a constant of around 350 and around 550 on the front. Considering all drafts from drawings to spinning he has around 21. It is essential to keep the stock even or the variation will jump in a hurry. However, he added that his numbers vary from 1 to 1½ numbers. He concluded his discussion by saying that on the whole he believes the long draft is better. Continuing the same subject, Mr. Byrd stated that the temperature in the room affects the long draft more than the conventional type. He finds that it runs better if the temperature is kept around 75 to 80 degrees F., and humidity at from 60 to 70 degrees. Mr. Harden asked if anyone had cloudy places appearing in the drawing frame web, especially in the mornings up to around 9:00. Mr. Oldham offered the suggestion that if the temperature could be kept up over the week-end when the mill is not in operation the situation might be remedied, since it is believed that the temperature causes such occurrences.

Lightweight Spinning Tape

The next question concerned the use of light or heavy tape on spinning and twisting. J. L. James, Erwin Mills No. 1, Durham, N. C., had run several tests and found that the light tape increased the spindle speed around 200 revolutions, thus giving a saving in power. He found that he got lighter laps when sewing the lighter tape. Mr. Parks, of Erwin, had had quite a different experience, having been so well impressed with the light tape at first that they got all light tape but later had to change back because of lint accumulating next to the driving faces, causing them to get soft yarn and slippage. Since in both cases the same type of weave was being used, it was decided that the difference came about through the fact that one was run on ball bearings and the other not.

J. T. Garner, Roanoke Rapids, N. C., has found that the light tape lasts longer and he has not had any trouble with a cushion forming on the tape. He laps his tapes around 2 inches and sews in a "Z" across, making an "X" in the center. Mr. Long has had experience using a metal hook on heavy tape. It is clamped on the tape and put together with a rawhide pin. This method is quick and the tape lasts much longer.

The following officers were elected for the ensuing year: W. H. Miley, Jr., Erwin (N.C.) Cotton Mill Co., No. 2, chairman; George L. Gilliam, Sterling Cotton Mill, Franklinton, N. C., vice-chairman; D. E. Long, Oxford (N.C.) Cotton Mill, secretary; and Robert Bunn, Henderson (N.C.) Cotton Mill, member of executive committee.

Piedmont STA Men Study Weaving and Slashing

THE PIEDMONT DIVISION of the Southern Textile Association held an interesting meeting on the subject of weaving at the Charlotte (N. C.) Hotel, Saturday morning, April 6. About 50 men were present. Though the crowd was somewhat smaller than usual, much helpful exchange of information passed. The meeting was in charge of B. M. Bowen, Salisbury (N. C.) Cotton Mills, and the discussion was led in a masterly manner by P. B. Parks, Jr., Erwin (N. C.) Cotton Mills Company, Plant No. 5, a visitor to the section and president of the Southern Textile Association

Shuttle Life

The first question asked for the life of shuttles on duck and osnaburgs, but this was expanded to take in any fabrics being run by the mill men present. A. W. Benoy, Consolidated Textile Company, Shelby, N. C., advised that he gets 3300 loom-hours per shuttle as an average on print cloth and broadcloth, running three shifts. J. O. Williams of the Shelby (N. C.) Cotton Mills brought out the fact that shuttles will last much longer on light fabrics than on the heavy ones, inasmuch as quite often there are mat-ups that throw the shuttle out and break it, and on warps having fewer ends, there is much less chance for mat-ups to occur, these being in proportion to the number of ends in the warp.

It was further brought out in discussion that the life of the shuttle is decreased when the looms are changed from one construction to another. The comment of W. F. Wellman, Salisbury (N. C.) Cotton Mill, was that many shuttles are either damaged or broken by being trapped in the shed, which might be caused by harness, strappings, etc., breaking and he added that he has found in the long run the least expensive strapping is the best that can be purchased. He also added that gouts have quite an effect on the life of the shuttle.

The discussion leader brought laughter from the crowd when he said that every overseer of weaving, regardless of the type fabric he is running, considers that particular fabric to be most detrimental to the shuttles. He also added to the discussion by saying that in warps where there are many ends crowded together, often the end breaks and the drop wire does not fall, causing a serious mat-up so that the shuttle is thrown out.

Quite a bit of discussion centered around the advisability of purchasing loom parts from sources other than the manfacturer of the original machine, such as local foundries, parts manufacturers, etc. Many of those present do purchase some of their parts from local foundries and parts manusfacturers, usually doing so because the shipments are much quicker, but at the same time receiving quite satisfactory service from the parts that are used. E. W. Campfield of the Alexander Mfg. Co., Forest City, N. C., reported that he gets excellent results with a cam shaft gear for his Model-L looms, secured from a local foundry. Dillon Poston, Pee Dee Mill No. 2, Rockingham, N. C., uses a number of idle gears for the harness motion, getting them from a local foundry, and though he is satisfied with the gears, he does not think they are better than the ones furnished by the loom manufacturer, but he can get them in a few minutes simply by calling on the telephone. He does not buy battery parts from the same source, he advised in answer to a question. Another mill does buy a few battery replacement supplies from a foundry, and such items as lay patches, etc., also.

Mr. Parks

Mr. Bowen

Another man explained that though the cam shaft gear is purchased from a foundry, a practice is not made of buying all other parts because he does not consider that the foundries finish the parts properly, and added that it is not right to buy a loom from a manufacturer and then turn around and buy parts from some other place. He explained that in his own opinion the manufacturer of the machine understands the engineering of the various parts and can make them better.

H. G. Winget of the Victory and Winget Plants of Textiles, Inc., Gastonia, does not have looms in his fine yarn mill, but brought out the fact that it requires from 30 to 45 days to get parts from the East, whereas the concerns in his own home town give him immediate service. It was also pointed out that washers are just as good made in the South as in the North.

A question was asked if anyone has been troubled by a defective supply part, and after pointing this out to the manufacturer, the manufacturer seems to take no interest in improving on the design of the part. In answer, one man said that only recently he had requested the manufacturer to reinforce a certain loom part and this was done almost immediately.

Three quite pertinent points were brought out: One was that in instances where the loom manufacturers seemed to be in no hurry to improve a certain part, this work is given to another concern which almost immediately does what the mill requests. Another was that in some instances the loom manufacturer spends much time and money perfecting a part, and as soon as it is properly constructed, the mill turns the part over to a foundry to be made at a cheaper price. The chairman brought up the very important point that the mill may request some loom part to be reinforced by a foundry, when this particular part has been so constructed by the loom manufacturer that in case of strain on the loom, this very part is supposed to break, and will break, instead of some other more costly part.

Loom Gears

A question was raised as to where shuttles could be reworked and regrooved, and the crowd was told that such a machine is available from the Textile Specialty Company, Greensboro, N. C.

J. L. Brannan, Hermitage Cotton Mills, Camden, S. C., asked what ma-

Reported by John C. Fonville.

● At the meeting of the Piedmont Division in Charlotte, P. B. Parks, Jr., president of the Southern Textile Association, advised those present that non-membership in the Association does not restrict attendance at the meetings, but that a paid-up membership automatically entitles the member to receive the annual yearbook, which is a compilation of reports of all the divisional meetings. . . . . .

terial the gears (motor and pinion) should be made of in order to get best results. One man told of using a steel pinion and a cast motor gear on Model-X looms for three years and not losing one yet. The chairman said that where the shock is not to great a fiber gear can work satisfactory against cast iron gear, but a cast iron gear should never be meshed with a cast iron gear; also, if the teeth in the fiber gear break, the other gears are not damaged. Another members said that "steel against steel is too much steel", meaning, that where gears mesh they should be of different materials.

Slasher Controls

Next on the prepared questionnaire was "What are some of the advantages, or disadvantages, of automatic control on slashers?" This question was enlarged to include the use of control instruments for cooking the size mix also, because, as pointed out, most mills have some method of automatic controls for this job.

At this point the leader, Mr. Parks, extemporaneously traced the history and development of slasher controls. It so happened that no one present had slashers completely equipped with automatic controls.

Starch Control Machine

David Clark, Charlotte, N. C., said that the Jackson Mills No. 3 at High Shoals, N. C., has a new automatic starch control machine with which it is well pleased and F. W. Warrington of F. W. Warrington Company, Charlotte, agent for the company making the machine, was called on to describe it, which he did as follows:

"The machine consists of a hopper, placed under any suitable size starch bin the mill wishes to build, and is equipped with automatic mercury controlled scales so that the scales may be set for the required poundage of starch to be placed in the mix. Once the bin is filled, the machine automatically weighs the starch accurately, and releases it into the kettle where the operative moves a control lever. It eliminates all waste starch, saves much trouble on the part of the man mixing the sizing ingredient, and allows the operator to devote more time to his job. It gives uniform amounts of starch at all times, eliminating the human error. Once the starch bin above the hopper is filled, there is no need to have sacks of starch on the floor, no need for buckets and scales."

The question was brought up as to how the machine operates when the starch acquires more moisture, and another mill man present was of the opinion that inasmuch as the starch is

Mr. Benoy

Mr. Brannan

in a closed bin, it is likely that there will be little moisture effect on the starch.

More on Shuttles

The next discussion centered around shuttle consumption when the mill changes to different warp constructions, reeds, number of harness, etc., and it was generally agreed that a lower shuttle life could be expected in such instances, with each particular construction calling for its own loom settings and alignment. It was said by one man that his looms are aligned each time a new warp is put in the loom regardless of whether the same reed is used or not. In other words, even if a new warp is tied-in with a tying-in machine at the loom, and the same reed is used, the loom is aligned if need be. The old question of using reeds of different depths was brought up, and a reed with metal top was described as having the same depth at all times, even when the dents per inch are different. It was agreed to be good practice to standardize on the depth of the reed.

Mr. Williams also considered it highly important to change the power on a loom when going from a light to a heavy construction, and vice-versa, or many shuttles would be broken or excessively worn, and especial emphasis was placed on the fact that no loom should be run with excessive power.

When asked how the harness are set to get the best shuttle life, Mr. Wellman said that on 3-harness work the first two harness are set "just off" the race plate.

Summing up the discussion, Mr. Parks said that in changing from one construction to another, it is necessary to align and set every part that has to do with the operation of the shuttle in order to get high shuttle life.

Positive Drive Slashers

"What are advantages or disadvantages of positive drive creels on slashers; also positive drive slasher cylinders?" was the next question. No one present has had experience on the positive drive creel for slasher, but Mr. Benoy explained that he was interested because he has seen them advertised in the textile papers. [A description of the yarn tension equalizer will be found on page 93 of the October 1937 issue of COTTON. A discussion of the positive drive creel will be found on page 85 of the October 1939 issue.]

One man present has seen the device in operation and said that at the mill where it is used it has reduced the stretch in the yarn and eliminated much waste on the section beams, created by stretch of the yarn. The chairman said that he is familiar with this stretch problem on the section beams and has found that much of it is due to the condition of some of the ropes (with weights attached) used for brakes becoming gummed or sticky while others do not, making the tension on some beams greater than on others. He added that the positive drive creel would help this condition.

Mr. Benoy has the positive drive on his cylinders, running 80x80 39-inch goods, 32s warp, and also a "compensating trick" which is quite satisfactory. He said that the more strength there is on the warp the less necessity for taking the strain off by using positive drive on the cylinders. At this point the chairman explained that some mills, according to the style being run, prefer the yarn to hug the cylinder in order to get the desired sizing effect; this has reference to heavy constructions. Marshall Dilling, A. M. Smyre Mfg. Co., Ranlo, N. C., said that the principle of the positive drive creel and the positively driven slasher cylinders is the same inasmuch as both methods tend to reduce the stretch in the yarn.

Mr. Bowen injected a question which had to do with comparing the amount of stretch in yarn that is warped by old and new warpers, and he was told that any warper that has to revolve

• The annual convention and get-to-gether of all divisions of the Southern Textile Association has been announced for the week-end of June 6-7-8, at Blowing Rock, N. C. Convention headquarters will be at the Mayview Manor, where the Association has met on alternate years for the past several times. An excellent program has been arranged for the business sessions, with addresses to be heard on safety, wage and hour law, government research and general business. Afternoons and evenings will be given over to entertainment.

Hotel rates at Blowing Rock are very reasonable. All hotels are close to convention headquarters so that those registered at places other than Mayview Manor will be able to attend all of the sessions.

the package will stretch the yarn more than a warper which takes the yarn off over-end or at the side, and in order to compensate for the stretch and consequently a finer yarn, his numbers should be slightly heavier. Mr. Benoy added that there is likely to be somewhat more stretch in the yarn on present-day warper beams than on the older type because the beams on newer warpers are larger and therefore heavier, giving more drag on the yarn. J. L. Brannan said that there is 10 per cent less stretch on warpers that take yarn off over-end as compared to warpers on which the yarn pulls the package and rotates it.

Uniform Cloth Width

In a discussion as to how to maintain uniform cloth width so that the goods will shrink uniformly in Sanforizing, one member said that the width at the loom would have to be controlled by the regulation of the let-off and take-up motions. Mr. Cargill, whose mill makes cloth 39-inches wide at the loom, said that the cloth loses 2¼-inches in width at the Sanforizer when the cloth is shrunk 13 per cent warpwise. His cloth is kept within from ¼-inch to ½-inch of 39-inch standard at the loom. Other causes stated for difference in cloth width were: difference in sley, crimp in filling, and tension on the cloth.

Another member said that much variation in cloth width depends on the "human element" as every loom fixer believes that he knows what the proper tension is on the goods on his section. The overseer of this mill uses a caliper each day to determine that the proper pick gear is being used, and also feels the cloth for proper tension. He further added that the selvages must be drawn properly to control the cloth width. The chairman's opinion was that in addition to the foregoing, there should be standard settings for all looms on the same fabrics.

Large Package Filling

Work done by the cloth room to repair weave room faults was next brought up. One man said that the only thing done by his cloth room is remedying kinky filling, while another said that his cloth room repairs any damage done to a piece of cloth that will make the cloth "good", but never just cover up and "hide" some defect. The chairman said than any mill is fortunate to have the cloth room report to the weave room immediately on defective cloth, and that the weaver should consider this a service instead of criticism.

"To what extent does increasing the amount of yarn on the filling quill affect the supply bill of the weave room?" was the last prepared question. In the discussion that developed it was pointed out that much of the trouble occurring on a loom happens at the time of transfer, and if the package is large and has more yarn on the quill, naturally there will be less battery transfers and consequently less breakage of parts and less to get out of adjustment because of the terrific punishment to the loom at the time of transfer. Mr. Bowen also added that with less battery changes there is less chance for seconds.

When a question was asked as to the "ideal" twist multiple to be run in filling, it was reported to be the general practice to insert as much twist as necessary to make the work run good in the weaving, without causing kinky filling.

In a brief business session, B. M. Bowen, Salisbury, (N. C.) Cotton Mills was re-elected chairman of the division for another year. W. P. Cargill, Pee Dee Mfg. Co., Rockingham, N. C.; and J. Manning Bolt, Chadwick-Hoskins Co., Charlotte, N. C., were elected to the executive committee.

South Carolina Weavers STA Discuss Finishing Problems

THE WEAVER'S Section of the South Carolina Division of the Southern Textile Association held its spring meeting at the Drayton Mills' community house, Spartanburg, S. C., Saturday morning, April 20, with G. G. Simmons, technical superintendent of Drayton, presiding; and Frank D. Lockman, Monarch Mills, Lockhart, S. C., leading the discussion. About 175 mill men were present, many of whom attended the opening game of the Drayton Mills' baseball club in the afternoon. J. O. Thomas, Marshall Field & Co., Spray, N. C., who is chairman of the board of governors of the STA, was introduced and made a brief talk, inviting members of the South Carolina division to other meetings of the association.

Finishing Problems

W. F. Robertson, Jr., superintendent, North Carolina Finishing Company, Salisbury, N. C., was the guest speaker and brought some interesting and instructive points to the group pertaining to the "headaches" for both manufacturers and finishers of fabrics. Some of the major problems discussed by Mr. Robertson were:

First: The practice of mill cloth rooms of looping colored threads into the selvage to denote defects. He discussed the use of fast and fugitive colors on these threads, saying that if the cloth is to be bleached the fast colors will bleed on the cloth when it is subjected to high temperatures in the bleaching process. If the cloth is to be dyed without bleaching, a fugitive color will give the same effect as the fast color will in the case of bleaching. Although it is necessary to mark the defects while inspecting the cloth in the cloth room, he stressed the importance of removing these colored threads before the cloth leaves the cotton mill, because if they are left in the cloth, they will have to be removed at the finishing plant before processing, or seconds will result. He also mentioned the troubles that are caused by crayon marks and stamp marks on cloth.

Second: Mr. Robertson discussed the detrimental effect caused by caustics which are used in size compounds to break the starch down; namely, the formation of solids on the warp which are nearly impossible to be entirely removed by the desizing process. If these solids are left in the cloth they will tend to repel the dye, he said, giving the filling a better color than the warp. He suggested that the most soluble size compounds obtainable be used.

Third: Tight selvages cause much trouble and are very treacherous in a finishing plant, the speaker said. The cloth is under tension on nearly all machines and if the selvages are tighter than the body of the cloth, the selvages will be torn.

Four: Defects caused by bad reeds and misdraws in the reeds will give more trouble on goods that are finished white than those to be dyed solid colors, or that are to be printed. He brought out that black and other dark colors are a great help in covering up many such defects.

Fifth: Mr. Robertson said that hanging threads are common in most types of cloth and should be cut off before

Reported exclusively for "Cotton" by W. H. Spencer, Jr., overseer weaving, Whitney (S.C.) Mfg. Co.

reaching the finishing plant. This causes more trouble on goods that are to be used for uniforms, shirts, sheets, etc., and these threads must be cut off before the garment manufacturers can make first quality goods for the market.

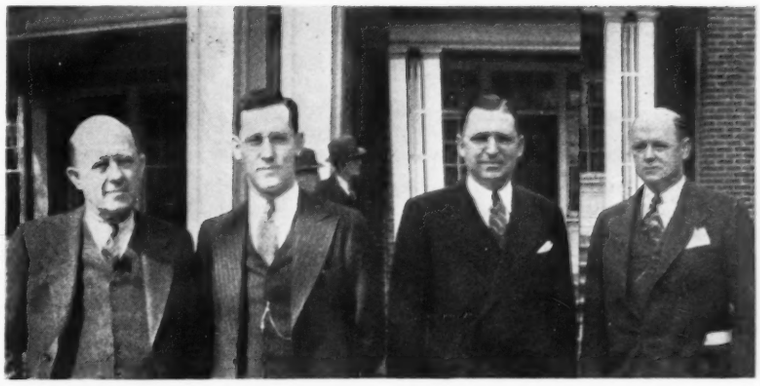
Sixth: He pointed out that the cloth width should be uniform, especially if the goods are to be Sanforized.

Seventh: According to Mr. Robertson, oil spots present a serious problem on goods which are to be dyed. He said that on bale goods it is advisable not to use oil remover at all because these goods are dyed without bleaching, and as the oil remover is a penetrant, it attracts the dye and will cause dark spots. A pure neutral soap is best to be used on these goods, he said. Continuing, he advised that the use of oil remover is satisfactory on printed or white finished goods, provided the solution does not contain any iron and provided the spots are not rubbed too harshly with sharp instruments. He suggested rubbing the spots with the smooth side of a tablespoon, because if a sharp instrument is used the fibers will tend to be separated, causing the dye to penetrate more deeply at this spot. Such defects are termed "chafed" spots.

In answer to a question as to what effect conditioned filling will have on goods to be dyed, Mr. Robertson said that inasmuch as conditioning fluid is a penetrant, it will cause the dye to be attracted to the spot where the fluid is most prevalent, causing a spotted effect. This is not noticeable in goods that are bleached before being dyed because conditioning fluid is removed during the bleaching process.

It was brought out that in light of the foregoing facts, it will be most helpful if the manufacturers will keep in close contact with the finishers at all times concerning his manufacturing methods, and both will be in a better position to process their goods in such a way as to be of mutual benefit to each other. Also, the manufacturer, if he knows what the goods are to be used for, can use different standards for inspection and grading of the cloth.

Following the discussion by Mr. Robertson, Lewis Burgess, Crompton & Knowles Loom Works, Charlotte, N. C., presented some helpful pointers on controlling the supply cost in the weave room. He said that the cost of weaving is the largest expense of a mill making fabrics, and then told some of the ways in which this expense could be reduced. He suggested that the mill conduct loom fixing classes; keep accurate supply records and a well arranged stock of supplies; store the supplies properly, and if possible use rotary bins in the supply room; arrange loom parts in bins according to the motion to which they are attached; use a system of disbursing supplies; and identify supplies by numbers, symbols, etc.



Left to right, Frank D. Lockman, Monarch Mills, Lockhart, S. C., leader of the technical discussion of STA at Drayton Mills; Garland Simmons, of Drayton Mills, chairman of the division; W. F. Robertson, Jr., North Carolina Finishing Co., Salisbury, N. C., who addressed the group on finishing problems; and Lewis Burges, Crompton & Knowles Loom Works, Charlotte, who discussed controlling weave room supply cost

Practical Discussion

The greater part of the meeting was taken up with the two foregoing addresses, and discussion of them, but F. D. Lockman found time to lead a brief technical session. The first question concerned trouble with sliding bars in the warp stop motion clogging up with lint and interfering with the action of the drop wires when an end breaks. J. H. Burgess, Gayle Plant of Springs Cotton Mills, Chester, S. C., advised that a good remedy for this problem is to remove the inner bar, clean it off, and clean out the inside of the stationary bar with a tool similar to a knife blade. J. Manning Bolt, Chadwick-Hoskins Co., Charlotte, N. C., said that he bores holes in the side of the stationary bars, which permit some of the lint to be pushed out through them as the inner bar slides back and forth.

The next question discussed was on the proper harness settings, cam timings, and type selvage to be used on heavy pick sheetings with coarse yarn numbers. It was said that the harness should be level with the crankshaft on bottom center and that ply ends should be used in the selvages. A question was then injected regarding excessive "heat up" in this type of goods. Mr. Lockman explained that a high setting of the let-off drive rod arm is one of the main causes of this because such a setting will cause the let-off motion to operate intermittently and allow the warp to be slack until the take-up has time to tighten it. He suggested that the drive rod arm be lowered, which will operate the let-off motion in such a way as to give a steady let-off instead of an uneven one with obviously better results.

Ply Selvages

In a discussion of when should ply selvages be used, one man contended that they should be used on all types of cloth, whereas a representative of Ware Shoals (S.C.) Mfg. Co., said that he uses ply selvages on flannels, broadcloths and birdseye, but not on osnaburgs. R. T. Stutts, Woodside Cotton Mills Co., Simpsonville, S. C., reported that he uses all ply ends in selvages, and Hunter West of Converse said that he uses ply ends in selvages, with two doubles on the inside of each.

The problem of ply selvages not weaving at the same tension as the body of the warp was discussed next. Mr. Swink, Drayton Mills, explained that this could be prevented by laying the selvage ends half as many to the dent in the slasher comb as the body of the warp is laid in. J. L. Adams, Whitney (S.C.) Mfg. Co., suggested the same procedure as Mr. Swink and also discussed the possibility of the trouble being caused by variations in the twist and yarn numbers of the ply yarn. Both men mentioned the fact that the operator can feel the warp while it is running on the slasher and tell if the selvages have the proper tension in relation to the body of the warp. Mr. Bolt also suggested that a dent in the slasher comb be skipped between the body and selvage, which will allow the selvage still more room to build on without being higher than the body. In further discussion, it was decided that the same principle applies to tight selvages when running spun rayon. It was also brought out that the tendency of tape selvages to roll on high sley satins is caused by improper leasing and tension on the slasher.

In a discussion of washboard shuttles and how to prevent them, Mr. Burgess

(*Continued on page* 114)

CURRENT TEXTILE TOPICS

New phases mark the spring trade

IT IS axiomatic of cotton goods that they often form the vanguard of a forward economic movement general in character. Through the first three months of this year the country was soberly observing a recession, wondering whether the extraordinary fall business and accumulation of inventories was to be followed by a temporary lull and spring recovery, or whether the reaction would be of disturbing duration.

Before the skeptical attitude had become generally dispelled, the buyers of cotton goods had indicated that they at least realized the situation to be brighter than it was painted. Goods bought before January, though heavy in volume, found a broad consumption in a long period during which the buyers postponed replacement operations. Thus before the end of March these buyers found inventories well in hand and the conditions right for new purchasing.

It is well to bear in mind that this was the domestic situation which started a recovery movement, because a new phase of things developed on April 9, following invasion of the Scandinavian countries by Germany. The war, which was the basis of last fall's economic spurt that demonstrated the country to be ready for a forward movement on purely domestic conditions for the most part, gave new impetus to business. The spring spurt likewise started on a sound domestic basis.

Politico-economic entanglements

During the past decade, industry struggled with a new social-economic consciousness in this country. Cotton manufacturers had recognized it even before it was thrust into the public gaze by the New Deal. The industry has been working, along with other branches of business, to make necessary adjustments. Meantime, the past two years have provided new politico-economic entanglements in threats of war and finally the actuality thereof.

Gradually over the first six months of the war begun in September, it became clear to American business that the country at long last was realizing trade potentialities that had been lying dormant. The political-economic developments at home and abroad kept traders in a state of uncertainty, which always retards business. This element obscured fundamentals. Ironically enough, it was the certainty of war that fomented action.

But whereas the war started action, it did not develop the expected foreign business. On precedent, speculation was rife because it was feared that actual war business would divert commodities from normal channels. Fortunately, as events disclosed, the boom was predominantly sound domestic business from which no sad repercussions would ensue in the case of suddenly terminated war.

Mill production situation shifts

After reaching 730,000 bales in January, or the second highest month on record, consumption of cotton began to reflect concern over accumulation of inventories and lack of demand. The latest figures of the Census Bureau, at time of writing, showed a reduction of more than 100,000 bales for March as against January. The April figures were expected to show not only a seasonal dip but a considerable curtailment to offset the unsound tendency.

Meantime, there were encouraging reports early in April as to the inventory position which forecast a better mill production situation after a moderate period of curtailment. As stated by the National Industrial Conference Board, there had been a small but significant decline in the physical volume of finished goods in the hands of manufacturers during February. Manufacturers' stocks of raw materials, too, turned downward in January after rising four consecutive months.

This report on general industrial conditions was confirmatory of unofficial advices from the cotton goods market for many weeks previous to April that heavy gray goods production since September had been well absorbed. In a declining market the first quarter of this year, converters held off for the low point, but inquiry was clearly indicative of replacement requirements in gray goods as the spring season entered with finished merchandise normally in broad turnover.

Courtesy, American Viscose Corp.

The bathing suit in this picture is made of Vinyon, the new textile fiber. The yarn, it is pointed out, possesses rapid drying characteristics, exceptional resistance to salt water, and retains its original strength when wet. The Vinyon fiber bathing suit was developed by William Rothlein, of William Rothlein & Co., Inc., at Queen City Textile Corporation, Allentown, Pa.

Insidious price precedent holds

Cotton mill manufacture has gone through an evolution in recent years which is stated to have made impracticable certain wonted practices of dull periods, notably the operation of plants for occupation even at prices below costs. Such operation for a moderate length of time, in former times accepted as a kind of economy, (cheaper to run at a loss than to shutdown temporarily) apparently is untenable as a production policy today in view of rigid costs.

Such operation even in the old days was productive of evil, for it intensified pressure for low prices and thereby lengthened the recessions. The peaks and valleys were intensified. And it has frequently occurred that subsequent statistical information disclosed an unsound operation of mills had been based upon exaggerated ideas of inventory. In other words, buyers held off when they actually needed to replenish and mill stocks were not excessive.

When buying broke out in volume the last of March, it was not long before mills had cleared spot stocks, but the movement ran to heavy volume at prices below cost. Notwithstanding that the industry was carefully watching production schedules to avoid burdensome accumulations, they were lured once more into the insidious competition of prices below cost. The lesson of controlled production seems working salutary effect. Why not break bad price precedent?

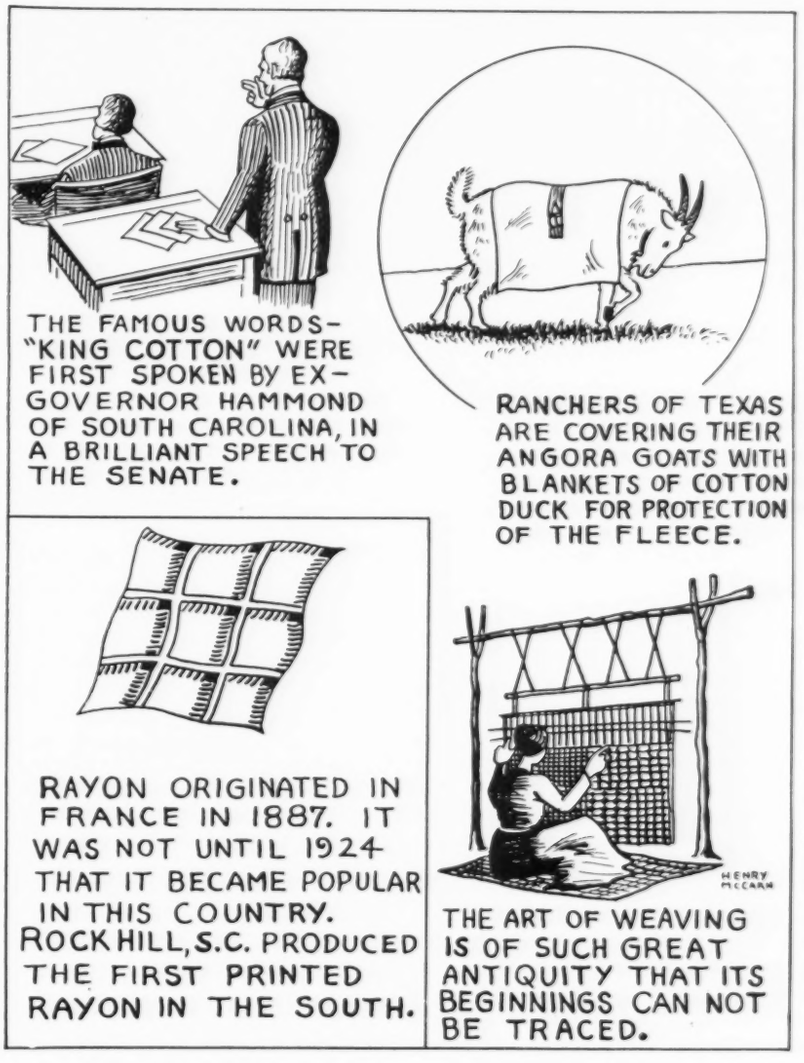
Favorable start to the quarter

William P. Jacobs, director of the print cloth group of cotton manufacturers, accused the industry at that juncture (end of March) of suffering from what he termed "stockphobia" and challenged anyone to prove that stocks were burdensome. He stressed the idea of stock figures both by print cloth mills and converters, for giving a true picture of the inventory position. "Too frequently," he said, "we have concluded that when mills have heavy stocks they are in a precarious position".

Significant was the quick disappearance of spot holdings that started almost simultaneously with his remarks. And sellers were encouraged to resume sound pricing of goods. But it was not until after they had allowed the market to drift back almost to the level of last August. Yet the early 1940 movement was presumably only a recession and nothing like a depression.

General business was still uncertain up to the present month, but there were signs of levelling-off from the decline in industry. Cotton goods came into the second quarter with fundamental conditions favorable. Not only was the prospect good in consumer lines, but industrial demand promised to keep distribution well spread. However, mills were not minded to terminate curtailment too soon.

TEXTILE HIGHLIGHTS, by Henry McCarn


THE FAMOUS WORDS—"KING COTTON" WERE FIRST SPOKEN BY EX-GOVERNOR HAMMOND OF SOUTH CAROLINA, IN A BRILLIANT SPEECH TO THE SENATE.
RANCHERS OF TEXAS ARE COVERING THEIR ANGORA GOATS WITH BLANKETS OF COTTON DUCK FOR PROTECTION OF THE FLEECE.
RAYON ORIGINATED IN FRANCE IN 1887. IT WAS NOT UNTIL 1924 THAT IT BECAME POPULAR IN THIS COUNTRY. ROCKHILL, S.C. PRODUCED THE FIRST PRINTED RAYON IN THE SOUTH.
HENRY McCARN
THE ART OF WEAVING IS OF SUCH GREAT ANTIQUITY THAT ITS BEGINNINGS CAN NOT BE TRACED.

New England Mill Situation

OPERATIONS in the cotton industry of New England have been well sustained, relative to those last year. Yet production has actually been declining since early in the present year. Curtailment is usual in the second quarter, but the fine combed goods mills were moved to anticipate this normal drop by reason of extremely heavy production in the late months of 1939 and subsequent lack of sales.

Mills consumed 78,475 bales of raw cotton in February and the first two months of the year showed 169,571 bales absorbed, or 15.7 per cent more than in the same period of 1939. The volume for February was nine per cent larger than that for the same month of last year. It is significant of careful mill policy, however, that February was 13.9 per cent below January in use of cotton by mills.

Business in raw cotton around the first of April told further the tale of lagging demand through the first quarter of 1940 in cotton goods. Mill buyers were taking practically no interest in the staple at the end of March. After the first spurt of goods activity in the primary market late in March and the subsequent activity after the Scandinavian war incident, however, broader inquiry was noted.

Fine goods follow other constructions

Producers of cotton goods in the New England section as usual have found their specialized lines secondary to the staples on a recovery. Inquiry broadened when printcloths and related fabrics spurted late in March. The secondary wave after the Scandinavian incident on April 8 still found combed goods mills watching the general movement and waiting for it to spread.

Some business was passed up, however, when it became evident that values were definitely strengthening. The mill men of this district saw no good reason to accept bids for late contracts at the prevailing loss levels. They were willing to move spot lots at the current levels, while hoping for the movement to broaden on a reasonable advance in prices.

Mills, meantime, were committed to a conservative basis of operations and did not plan any hasty departure from substantial curtailment. The fine combed goods branch all year to date has worked its mills on a policy calculated to impress buyers rather than to keep spindles and looms active. This in the long run is expected to rebound to the advantage of both owners and the mill employees.

New Bedford suffers two new mill losses

Under the stress of previous unhealthy years, the toll of New England cotton mills continues to drag along, with spasmodic casualties. Recent news has revealed two losses of plants in the fine goods center of New Bedford.

On petition of John W. Cussen, trustee, the Taber Mill Corporation has

• Miss Frieda Myers, who was recently chosen to be queen of the Third Annual Cotton Festival at Gastonia, N. C., June 10-15. Miss Myers is the daughter of A. G. Myers of Gastonia, receiver of Textiles, Inc., of that city, and president of the North Carolina Cotton Manufacturers Association.

been allowed to liquidate. The trustee informed the Federal Court in Boston that the employees had been trying to raise $100,000 in order to bring about a re-organization of the corporation, but had only been able to obtain half that amount. The corporation had no assets which would warrant an RFC loan, he declared, and the machinery was old.

Subsequent word from New Bedford was that certain interested parties had plans for operation of this plant and details later may be forthcoming of a new project. The Taber mill was forced out of business several years ago. Then the plant was re-opened and operated for several months with every apparent prospect of success. Then followed another period of several months of idleness and the attempt at re-organization.

Posting of notices that goods in process in the Kendall Mills at New Bedford would be run off preparatory to permanent closing was the other regretful mill event of recent date. About 400 workers were employed in the plant at the time of this announcement.

Officials stated that in six years of operation in New Bedford the company had never netted a profit. Yet the Kendall organization in its various units throughout the country made a net of $934,043 for the year ended Dec. 31, 1939, on its production of gauze, surgical dressings and allied lines.

This was formerly the Holmes Mill, built about thirty years ago. The Holmes management discontinued manufacture in 1931. The plant was idle for three years and then taken over by the Kendall company.

Pequot introduces sheet innovation

What is described as an innovation in the manufacture of sheets and pillow-cases has been introduced by the Pequot Mills of Salem, Massachusetts. It is a new line of muslin bed linens to be known as "Beauty Hems".

Sheets and pillow-cases have been made generally with turned and stitched hems, necessitating a sacrifice of several inches of bed coverage. The new hems are woven right into the fabric with a decorative design which gives a distinctive, tailored finish and eliminates loss of length. The lengthwise shrinkage of the sheets, moreover, has been reduced to a minimum.

"THE SITUATION" as seen Across an Executives Desk

April 12, 1940

WE ARE facing a most peculiar situation in the textile market, although the European War, which has taken on a very malignant tone in the last few days, may even change that before this summary is printed. The first of April marked a boom in textile cloth markets after a month of stagnation, and sales according to Worth Street estimation equalled production for the first time in 1940 on print cloth.

More than 15,000,000 yards of grey goods were sold in one day and the general reaction was the belief that primary consumers and distributors had cut heavily into inventories during the first quarter slowness. Following this spurt, other days that week brought out 40,000,000 yards of sales and later another 20,000,000 yards. In reviewing the cloth sales at that time, the Department of Agriculture Marketing Service said that, on the whole, cloth production during most of the first quarter of the year exceeded mill sales. Mills have reduced their backlogs of unfinished orders built up during late 1939 and apparently have increased stocks to some extent. Cloth prices have declined during recent months and mill margins have narrowed. The average margin of about 11.-70 cents (basis 17 constructions of coarse and medium cloths) for March compared with 12.25 cents in February; 13.36 cents in January; and 10.-11 cents in March 1939.

Business Is Picking Up

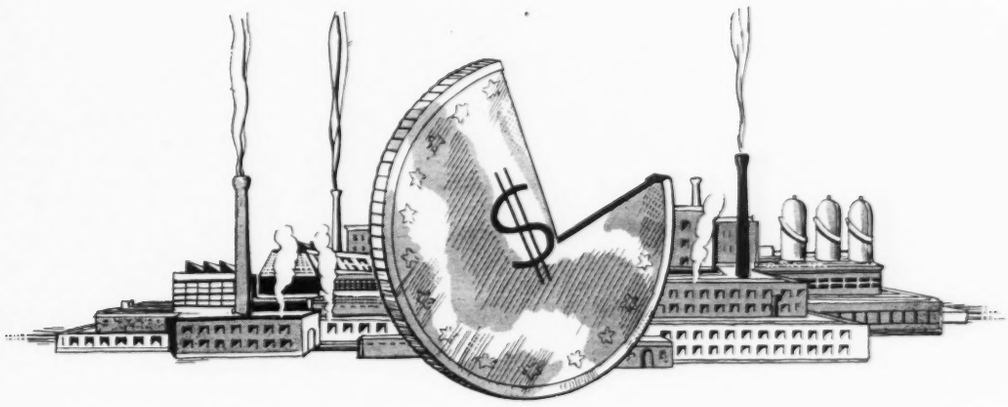
Cloth dealers are still booking orders at a fast rate, and it was reported from Worth Street that the first week of April an estimated 75,000,000 yards of print and broad cloth sold at advancing prices, sales piling up to around three times current output. Textiles simply reflected general business as the general industrial index turned up and steel and other key markets felt a spring-time revival. It may be that those elements plus optimistic gleanings from Congressional atmosphere inspired Dr. Claudius T. Murchison to predict unprecedented prosperity after the November election regardless of the winner. (See page 76.)

At least we have this summary: Considerable mill activity almost equal to the fall production schedules and elimination of the curtailment talk which circulated the market last month; advance of prices in the cloth field over the lows and drop in prices in the yarn field, toward a new 1940 bottom.

One of the most important sales of the month was that of the F.S.C.C. which bought 5,000,000 yards of wide sheetings. This news was considered in the market to be of a constructive nature and the government purchase was welcomed as a bullish factor. It was felt that this substantial purchase might prove to be the forerunner of a fairly general market interest. And it was stressed that if there had been any weak spots in the wide sheetings picture these would have been revealed in bids to the F.S.C.C. which were of a strong nature.

Raw Cotton Situation

During this period of better textile business the raw cotton market ebbed gradually, losing slightly from day to day until a moderate recovery took place in response to a large turnover and better prices in the stock market.



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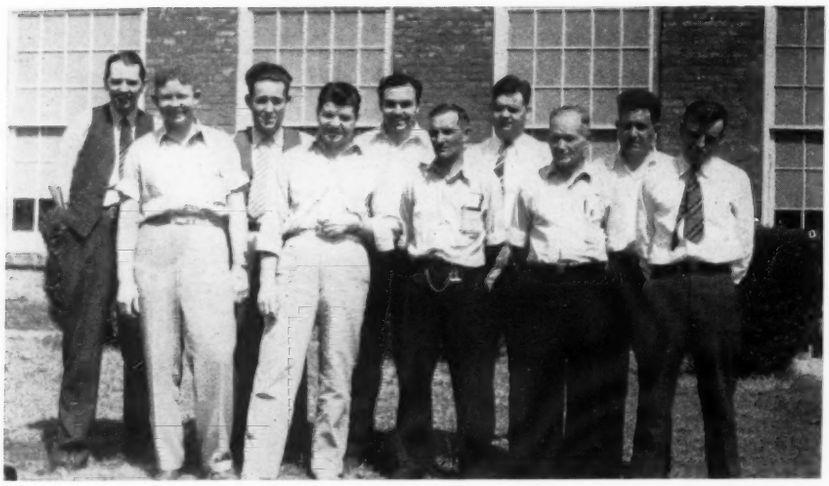


"Cotton's" roving editor-photographer caught this snapshot of the operating executives of **The Seminole Mills, Clearwater, S. C.,** manufacturers of spun rayon novelties and various blends. Left to right: **S. F. Winsper, Jr.,** manager; **W. M. Aiken, B. F. Gunnels, F. L. Kelly, Frank Madden, G. W. Rhoden, B. W. Baker, Sim Corley C. L. Busbee, and A. H. Pilkington** . . . . . .

The result of presidential primaries and some suggestions that money might be made available indirectly to allied governments were among the factors that influenced values in the share market, and cotton responded to a larger amount of Wall Street buying and some covering by professional shorts.

Earlier, New York had been under the influence of Bombay liquidation with April-May Broach there falling to 264 American points under New York, along with other foreign offerings, and this had sufficed to fill up larger scale price fixing orders for domestic mills reflecting the better textile business. However, foreign markets stiffened up some and contracts were somewhat scarcer for a time. On advances, however, cotton met with selling of hedges and offerings probably against 1938 loan equities, although it is indicated the market might have to go higher for old crop months to make many of the outstanding certificates profitable.

The New Crop

The new crop has come in for wider attention. The *Journal of Commerce* increased its estimate 11,000 acres to 24,814,000, off 0.1 per cent from a year ago. The *Daily News Record* reported 27,033,000 or about 8.9 per cent over a year ago. Receipt of daily weather details have revealed much more favorable conditions for plowing and planting cotton during the current week, and reports come of previous lateness of farm work being rapidly made up. There was talk of better seed and more careful cultivation with growers intending to obtain the best yields per acre possible this season. Increased use of fertilizer was reported from most states. Soil conditions and rainfall were reported satisfactory except in Western Oklahoma and West Texas where dust storms have been reported in recent days.

Wage-Hour Ruling Upheld

The cotton-textile industry fight against the wage-hour bill was lost in the U. S. Fifth Circuit Court of Appeals April 2 when the Fair Labor Standards Act was upheld as constitutional. The Court held also that the wage-hour administration's order establishing a minimum wage to textile workers of 32½ cents an hour was valid. The decision was handed down in the suit issued by the Opp Cotton Mills and 15 other southern mills. If and when decision is made not to appeal the suit, employees will be paid the difference due from October 24, 1939 to date. The 16 mills involved in the case are under bond to pay the differences between 32½ cents and 30 cent minimum wage upon final disposition of the case.

In an analysis of the Court's decision on the case, Tyre Taylor, attorney for the Opp Mills, stated that:

(1) "That Industry Committee No. 1 was properly constituted.' . . . . Section 5 (b) provides that those representing each group of the Industry Committees be appointed with due regard to the geographical regions in which the industry is carried on. The Administrator appointed three members of the public group, four members of the employer group, and two members of the employee group from the Southern States, but the petitioners contend that the South was not given full and proper representation. The provisions of the Act requiring the Administrator to give "due regard" to geographical regions in the appointment of Committee Members did not require him to apportion membership on the Committee with mathematical precision. It was the duty of the Administrator to exercise sound discretion in this regard and we do not find that he abused that discretion.'

(2) "That Industry Committee No. 1 preceeded in accordance with the requirements of the Act.

'The record shows that for several months Industry Committee No. 1 made a detailed and exhaustible study of the problems confronting the textile industry, and heard many witnesses, and considered many briefs, and statistical and economical studies.'

(3) "That, 'although a preponderance of the evidence disclosed that there is a decided rate disadvantage against the South,' nevertheless, 'substantial evidence can be found in the record to support the findings of the Administrator and we are not willing therefore, to overturn his orders.'

(4) "That the Fair Labor Standards Act is a valid exercise of the right of Congress to regulate interstate commerce.

(5) "That the delegation of power to the Administrator was not unconstitutional.

(6) "That the procedure followed by the Administrator in adopting the recommendations of the Industry Committee was in accord with the due process requirements of the Constitution.

'In passing upon the Constitutionality of the Act it is not necessary to determine whether all provisions are within the power of Congress. Section 19 provides for separability of provisions, and only those provisions affecting this proceeding are passed upon. If other provisions in the Act exceed the power of Congress they are clearly separable and do not vitiate the Act.'

"COMMENT.

"If this decision should be affirmed by the Supreme Court, it obviously could have extremely far-reaching effects upon the future of the textile industry, North and South. Thus there would be nothing to prevent sectionally biased Industry Committees and Administrators from fixing higher uniform minima up to 40 cents (as the law now stands) for the entire industry, thereby ultimately placing the South in what might prove to be an untenable competitive position.

"The implication of the decision is almost equally far-reaching for all other southern Industry."

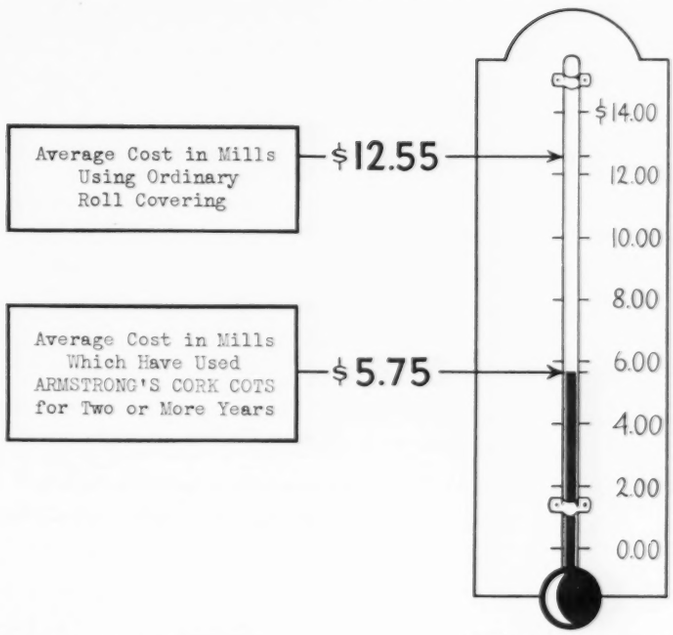
Another legal boogybear pending is the print cloth case in which will figure the Supreme Court's decision holding that the Ethyl Gasoline Corporation was guilty of violating anti-trust laws by exercising unlawful control of the price and distribution of anti-knock gasoline.

Other legislation affecting the industry was the continuation for three more years of the reciprocal trade agreements, and—of all things—the growing feeling since the guarantee of parity payments by the Senate appropriation committee that the certificate plan or the Processing Tax is out for this year.

And as we go to press, it is pertinent to note that court interpretations declare the picketing laws of certain states unconstitutional. Taking everything into consideration, though, it could be even worse—there might be a THIRD TERM.

WHY MILLS TURN TO *Cork* FOR ECONOMY

HERE'S PROOF—from Mills Spinning *Fine Numbers*—of the Economy of Armstrong's Cork Cots. (This is Number Two of a series showing savings of mills spinning different ranges of numbers on cork.)



Roll covering cost per million spindle-hours of operation.

AVERAGE SAVING $6.80

And here's a breakdown of actual roll covering costs as reported by representative mills which have been using Armstrong's Seamless Cork Cots for two or more years:

Mills Spinning Fine Numbers

Mill	No. of Spindles	Numbers Spun	Cost Per Million Spindle-Hours of Operation	Type Frames
A	12.5M	40s - 80s	$6.42	Regular Draft
B	27M	30s - 90s	8.41	Regular Draft
C	16M	30s - 70s	3.71	Regular Draft
D	38M	40s - 100s	4.44	Long Draft

THESE figures tell their own convincing economy story about Armstrong's Cork Cots. But, by no means, do these figures tell the *whole* story. Armstrong's Cork Cots save you money in *many* ways.

Their initial cost is no higher than that of ordinary roll coverings, they are quicker and cheaper to assemble, and they wear longer. Furthermore, you can rebuff these cots *three or four times*—at a cost of only about ½¢ per roll! In addition, running costs are reduced and quality is improved when yarn is spun on cork. You get less clearer waste, fewer top roll laps, less end breakage, and less eyebrowing.

An Armstrong representative will be glad to call and show you production figures of mills spinning your range of numbers on cork . . . and he'll show you how much *you* can save by changing over to cork *now*. Armstrong Cork Company, Industrial Division, Textile Products Section, 923 Arch St., Lancaster, Pa.

ARMSTRONG'S *Extra Cushion* SEAMLESS CORK COTS

CORK PRODUCTS SINCE 1860

COMMENT on the COTTON MARKET

New Orleans, April 16, 1940

THE DETERMENT to trade some weeks back, attributed to rumors of probable peace in Europe, made for inactive and easier markets during Easter time. There was no activity of consequence on the western front or at sea, which revived hopes that hostilities might cease soon. Because of the uncertainty then of the situation abroad, traders were not disposed to enter into new commitments except in a moderate way. The weather in the cotton region became more favorable, and although generally late, planting made some progress.

Of late the unexpected happened. Germany's invasion of Denmark and Norway changed the picture completely, peace rumors having vanished, actual war, on sea, on land and in the air, being conducted on an extensive scale. Climatic conditions in the cotton belt became unfavorable again with the return of another cold wave, damaging low temperatures having been experienced, especially to east of the Mississippi River where frost and freezing temperatures prevailed to the Gulf Coast.

The resumption of naval and military operations in Europe revived prospects for the continuance of a demand for war essentials from the United States which was reflected in a rising stock market and much activity in Wall Street. There developed a good demand for cotton goods, and there was a pick-up in exports of raw cotton. During the latter part of March foreign markets were reactionary, but American values for the actual dropped to within striking distance of the 10-cent level which apparently put a stop to loan releases, and as the volume of spot sales increased moderately on the subsequent upturn there were indications that buyers bid for the staple in a market in which supplies of available were limited. With the trade having to contend with another set-back to an already late crop start, and with war as an incentive, traders operated on the constructive side and mills fixed prices. The result was a better market with prices showing some improvement.

As regards the disposal of the 1940 United States crop, which is now in the making, the following late March Washington press report may have an unfavorable effect. According to Washington, British trade authorities informed American officials that the United Kingdom expects to curtail purchases of American cotton in a further move to conserve foreign exchange.

Officials were quoted as saying that Great Britain, while intending to reduce purchases in the United States, is preparing to buy more cotton in South America than heretofore. By so doing, it was said, it hopes to win a big share of export markets for industrial goods formerly supplied by Germany, and to make the most of its shipping facilities.

Discussing this development, recent press advices from Washington stated that agriculture department officials forecast difficulties in disposing of 1940 cotton abroad and predicted that the government again will be asked to advance large sums to growers in the form of loans on unmarketable surpluses. This is a discouraging situation.

The United Kingdom has been by far the largest recent importer of American cotton. It took 1,526,000 bales during the seven months ended March 1 compared with only 320,000 bales in the same period a year previously.

According to the final census report, ginnings of the 1939 crop were 11,812,000 bales of 500 pounds gross weight, compared with 11,792,000 for the previous year.

CENSUS REPORT, APRIL 13, 1940

United States— Bales—	This Season	Last Season
Consumption of lint in Cotton Growing States, March	540,000	548,000
Consumption of lint in New England States, March	68,000	85,000
Consumption of lint in All other States, March	18,000	17,000
Consumption of lint in United States, March	626,000	650,000
Consumption of lint in Cotton Growing States, 8 months	4,536,000	3,902,000
Consumption of lint in New England States, 8 months	642,000	582,000
Consumption of lint in All other States, 8 months	152,000	125,000
Consumption of lint in United States, 8 months	5,330,000	4,609,000
Mill Stocks March 31	1,596,000	1,415,000
Mill Stocks February 29	1,702,000	1,559,000
Stocks in public storage and at compresses March 31	11,404,000	13,478,000
Stocks in mills, public storage and at compresses March 31	13,000,000	14,893,000
Stocks in mills, public storage and at compresses Feb. 29	13,859,000	15,694,000
Active spindles in Cotton Growing States, March	17,055,000	17,059,000
Active spindles in New England States, March	4,907,000	4,820,000
Active spindles in All other States, March	593,000	625,000
Active spindles in United States, March	22,555,000	22,503,000
Active spindles in United States, February	22,804,000	22,533,000

AMERICAN COTTON

August 1 to April 12— Bales—	This Season	Last Season
Brought into sight (marketed)	13,490,000	10,328,000
Exports from the United States, incl. Canada	5,610,000	3,086,000
Spinners takings, World	(*)	9,354,000

WORLD'S VISIBLE SUPPLY OF COTTON

April 12— Bales—	This Year	Last Year
Stock at all U. S. Ports	2,851,000	2,224,000
Stock at 102 interior towns	3,482,000	4,084,000
Afloat to and at ports of Europe	(*)	817,000
Afloat to and at ports of Orient	353,000	194,000
Totals of American	(*)	7,319,000
Total of Other Kinds	(*)	2,451,000
Total of All Kinds	(*)	9,770,000

(*) Not available account of War conditions.

New Textile Publications

Dodge Manufacturing Corp., Mishawaka, Ind. Literature descriptive of new Dodge-Timken double interlock roller bearing pillow block.

Fidelity Machine Company, 3908-18 Frankford Ave., Philadelphia, Pa. Folder pertaining to the new skein reeling machine, introducing the twin unit system of skein reeling.

The Hart Products Corporation, 1440 Broadway, New York City. Technical service data bulletin on mercerizing and Dypenol SE, giving several processes for mercerizing.

Carbide and Carbon Chemicals Corporation, 30 East 42nd St., New York City. 32-page illustrated booklet entitled "Solvent Recovery by the Columbia Activated Carbon System", indicating where the system can be profitably employed.

The Cotton-Textile Institute, Inc., 320 Broadway, New York City. "Save Your Shirt", a brochure giving a study of cotton taxes and their effect on farmer, processor and consumer.

Lewis-Shepard Sales Corp., Watertown, Mass. Illustrated catalog covering over 175 of the most important items in the company's line of materials handling equipment.

The DeVilbiss Company, Toledo, Ohio. "ABC of Spray Painting Equipment", giving answers to the most common questions pertaining to spray guns, cups, tanks, transformers, air compressors, and other items of spray painting equipment.

Sorbtex Foundation, 210 East Franklin St., Richmond, Va. A brochure explaining the Sorbtex process for increasing the absorbancy of cellulose fabrics.

Westinghouse Electric & Manufacturing Co., East Pittsburgh, Pa. Illustrated leaflet on the nofuze circuit breakers.

Booklet describing the RLM fluorescent lamp luminaires.

New Departure, Bristol, Conn. Well illustrated 112-page book giving the principal reasons for the use of anti-friction bearings.

L. H. Gilmer, Tacony, Philadelphia, Pa. 96-page "Guide to Efficient V-Belt Practice" with color photos. Gives new horsepower ratings for multiple belts.

General Electric Company, Schenectady, N. Y. Booklet pertaining to pyranol capacitors for low-voltage industrial applications (GEA-2742A); Calrod immersion heaters for water and oil (GEA-214D); strip heaters (GEA-1157C); thermostats for use with midget heating units (GEA-1265D); unit heaters (GEA-2592A); please order by number.

Cochrane Corporation, 17th St. & Allegheny Ave., Philadelphia, Pa. New bulletin on baffle-type moisture and oil separators for use in vertical or horizontal steam, gas, and air lines.

Rockwood Sprinkler Company, 38 Harlow St., Worcester, Mass. A new 6-page circular featuring standard cold-forged steel unions with two silicon bronze, two stainless steel, or two Moly steel seats.

Manning, Maxwell & Moore, Inc., Bridgeport, Conn. Bulletin No. 5-7000, covering Hancock steel valves. Contains complete dimensions of all types of valves and specifications of all metals used in the valves.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa. 64-page catalog on Quick Selectors, the second edition that is published twice yearly.

New 4-page bulletin describing ac. and dc. fractional horsepower motors in sizes from 1/20th to ¾ horsepower.

Leaflet describing fluorescent luminaries with aluminum reflectors.

Rose Joins Phoenix Color

Harold W. Rose, formerly sales manager of the Warwick Chemical Company, West Warwick, R. I., has become vice-president in charge of sales of Phoenix Color & Chemical Company, Inc., 24 Van Houten St., Paterson, New Jersey.

The Right Starches... in the Right Places!

As specialty manufacturers of many years experience, we not only have the Starches you need, but the technical men who can tell you where these fit into your specific requirements.

We manufacture Starches and Starch Derivatives for every textile operation:

Corn, Tapioca, and Sago Starches
Thin-Boiling Starches
Dextrines
Chlorinated Starches
Gums
Special Products for Spun Rayon and Filament Rayon Warp Sizing

Our Textile Chemists can help you obtain the results you want---in warp sizing, printing, and finishing.

NATIONAL STARCH PRODUCTS Inc.

820 GREENWICH STREET, NEW YORK

What the Southern Mills Are Doing

The Suncook (N.H.) Mills have added hospitalization and surgical operation benefits to the provisions of their group program which since December 1933 has provided their employees with life insurance, now totaling approximately $345,000, supplemented by sickness and accident protection. The plan is being underwritten by the Metropolitan Life Insurance Company on a cooperative basis whereby the employees contribute fixed amounts and the employer bears the balance of the entire net cost. Under the present arrangement the more than 500 employee-members receive life insurance ranging in amount from $600 to $1,200, while in case of sickness or non-occupational accident they are paid weekly sums ranging from $7 to $20. Confinement in a hospital entitles an employee to receive either $3.00 a day or $5.00 a day for a period not to exceed a maximum of 31 days. Surgical operation payments range up to $150. The plan includes visiting nurse care and the distribution of pamphlets on health conservation and disease prevention.

Pittsburgh Plate Glass Company will build a new $350,000 paint plant at Houston, Tex., to serve the customers in that territory. A full line of paints, varnishes, and lacquers will be manufactured.

Esther Mill Company, Shelby, N. C., will install new equipment to enable the plant to manufacture a finer quality of fabrics. Improvements are also being made to the interior of the mill.

Drayton Mills, Spartanburg, S. C., has constructed one of the most modern weave rooms in the country. It is termite-proof, air conditioned and each loom, of the high speed type, has its own lighting unit. Loom installation will be completed at an early date.

Mathews Cotton Mill, Greenwood, S. C., has begun work on approximately 50 new houses for its employees. A 110-acre tract will be divided into lots of from one to 10 acres. Gardens and small scale farming will be available to every occupant.

Gastonia (N.C.) Combed Yarn Corporation has installed stainless steel package dyeing machinery and warp mercerizing equipment of the latest type; equipment was manufactured by H. W. Butterworth & Sons Co., Philadelphia.

Clara Unit of Goldberg Mills, Gastonia, N. C., has added a 125x250-foot structure to the finishing department, and is installing new modern equipment. At the Armstrong Unit, a 30x100-foot addition is used to house additional carding equipment.

Virginia Mills, Inc., Swepsonville, N. C., has installed an automatic rotary feed rawstock dryer made by the Philadelphia Drying Machinery Company, and a new high speed rawstock Fletcher extractor.

Stuart Rabb, formerly connected with Erlanger Mills, Lexington, N. C., is president and treasurer of The Stuart Mfg. Co., Easley, S. C., a new concern which will specialize in shirts, slacks and cotton ensembles.

It is reported that the original addition to Mill No. One of the Springs Cotton Mills, Fort Mill, S. C., will be enlarged about 50 per cent. It will be used for carding, spinning and weaving.

Esther Mill Company, Shelby, N. C., will install new equipment to enable the plant to manufacture a finer quality of fabrics. Improvements are also being made to the interior of the mill.

Kentucky Looms, Inc., is a new concern located at 817 West Market St., Louisville, Ky. The organization was formed by Raymond M. Wolfe and Herman Ullman.

A charter has been granted Highland Homespun's, Inc., Asheville, N. C., to manufacture and sell all kinds of textiles. Authorized capital stock is $50,000.

A charter has been granted Newton-National Corporation, Newton, N. C., to manufacture yarn, cloth, thread and elastic webbings.

Yarn Ass'n Golf Outing

The annual spring outing and golf tournament will be held at the Lookout Mountain Hotel, Chattanooga, May 23-24, it was announced by E. Dudley Bryan, president of the Chattanooga Yarn Association.

More than two hundred leading textile executives and manufacturers from over the nation are expected to attend for the 15th annual event to be held in Chattanooga.

The outing and tournament this year will be sponsored by the newly re-organized Chattanooga Yarn Association. The Chattanooga Textile Group, which has sponsored the event for the past several years, has been disbanded.

At a recent meeting in the Read House, Mr. Bryan, of Tubize, was elected president of the Association. Other officers are: George S. Johnston, vice-president; Spencer Sparks, treasurer and Charles Hall, secretary.

Chairman of the committees for the tournament and outing are: Golf, George Johnston; invitations, F. N. Belk; prizes, R. H. Griffith, and entertainment, Wilbur Lawson.

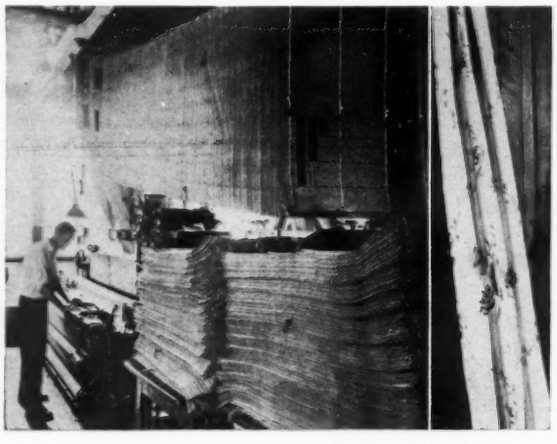
The golf tournament will be played over the Fairyland Golf and Country club course, atop Lookout Mountain near the hotel. For non-golfers various other forms of entertainment has been arranged, Mr. Bryan said, including skeet shooting, swimming, badminton and tennis.

The two day event will come to a close on the evening of May 24 with a floor show and banquet in the hotel main dining room which will be featured by the award of prizes in the golf tournament.

◆

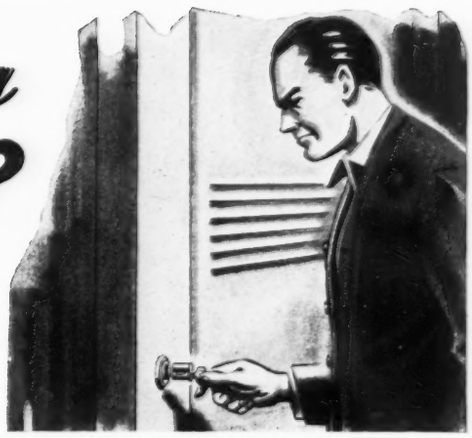
Office Moved

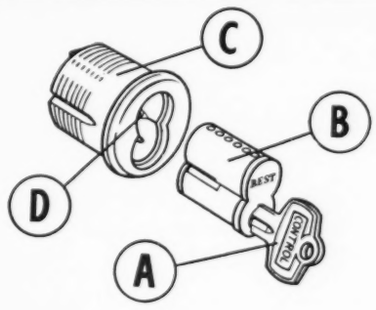
Cleveland Tramrail Erie Company, distributors in Erie, Pa., and surrounding territory for Cleveland Tramrail overhead materials handling equipment, has moved to 1731 Oxford St., Erie. H. M. Nelson is manager of this office.



• Manufacture of an unusually intricate Jacquard fabric at the silk mill of Cheney Brothers, South Manchester, Conn. Execution of this design required 28,500 cards. It is a reproduction of an antique hand-loomed fabric designed in the 18th century. The material is woven at the rate of five yards in 16 hours. Cream colors are used as the background in the fabric, with six colors, three running and three changes, in the filling. A section of the fabric (floral design) is seen at the right.

How quick can you change a lock?





ONE KEY GIVES YOU CONSTANT, MILL WIDE CONTROL OF SECURITY... CUTS LOCK UPKEEP... INCREASES SAFETY

The Key is your Private Control Key (A). It will remove the Interchangeable Core (B) of any Best Lock on your properties from its housing (C). A slight turn and out it comes! With the same key another Core of different combination is quickly inserted. And there... without a moment's loss of security or costly replacement... you have all the protection a new lock can give. The removed Core is not lost. It is recombinated and used over again.

The Safety Set Screw (D) which holds a Best Lock in place is inside the Core housing and cannot be tampered with... an added safety feature!

IN TEN SWIFT SECONDS

New security for mill property if you are equipped with BEST UNIVERSAL LOCKS

Every Best Lock... and there is a type for every mill use... is equipped with the exclusive Best Interchangeable Core. This Core contains the pin tumbler mechanism and locking combination. It will fit *any* Best Lock in your mill.

When danger threatens... when keys are lost... when personnel changes ... you can remove a lock Core in a flash and replace it with another Core of different combination. Lost keys or those in unauthorized hands are immediately useless. Thus you quickly gain a new lock's security, without a new lock's expense... end danger to property before it strikes.

You can start equipping your plant inexpensively with a few Best Locks and gradually develop a master keying system that will include every type of lock on your properties... on gates, supply rooms, shipping and tool rooms, oil houses, offices, desks, cabinets, and lockers... *anywhere!* And the Interchangeable Cores of any of those locks will fit any other... *instantly changeable*... so that you keep authority *always exactly* where you want it.

May we show you how Best Locks can give you better protection, greater flexibility and, at the same time, cut your upkeep and replacement costs? You can do it without changing your present lock hardware. Write *today* for free copy of our illustrated Preview Catalog.

THESE MILLS ENJOY THE BENEFITS OF A BEST UNIVERSAL LOCKING SYSTEM

Many industrial plants have started with a few Best Special Stamped Padlocks (with Interchangeable Cores) and extended the positive CONTROL, FLEXIBILITY and ADDED PROTECTION of the Best Universal Locking System throughout. Among the mills which enjoy Best protection are: Cannon Mills Co., Mt. Vernon Woodberry Mills, Inc., Marion Mfg. Company, Ware Shoals Mfg. Company, Highland Mills... and others. To end *your* mill locking problems, write for full details... now!

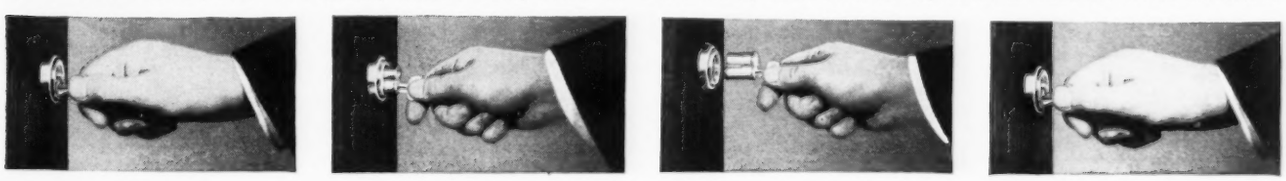
BEST UNIVERSAL LOCK COMPANY, INC.

730 East Washington Street • Indianapolis, Indiana

REPRESENTATIVES IN ALL LEADING CITIES

☆ ☆ ☆ ☆ ☆ ☆ ☆

INSERT CONTROL KEY, TURN 15 DEGREES, REMOVE CORE, INSERT DIFFERENT CORE, LOCK INTO PLACE, RENEWED SECURITY IN 10 SECONDS!



NEW EQUIPMENT and MATERIALS

Vat Colors

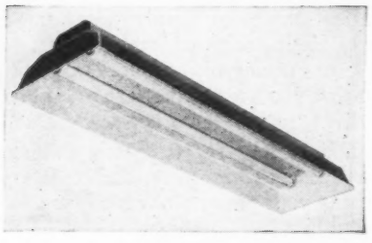
E. I. Du Pont de Nemours & Co., Inc., Dyestuffs Division, Wilmington, Del., has made available a new anthraquinone type vat color, Leucosol Red B. Paste, to produce bluish shades of red on cotton and viscose rayon. It may be used for printing drapery materials as it is very fast to light in medium to heavy shades.

Ponsol Brilliant Violet 3B Paste is a new color that produces bright bluish shades of violet on cotton and viscose rayon. It is recommended for printing and for dyeing by the reduced and pigment-pad methods and for use in pressure type dyeing machines.

◆

Rim Fluorescent

Westinghouse Electric & Manufacturing Co., lighting division, Cleveland, Ohio, has made available a new 48-inch, 2-lamp, 40-watt fluorescent luminaire with spread distribution designed

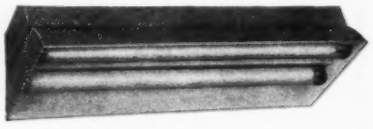


for general or supplementary lighting in low bay industrial areas. The units are furnished wired complete with hood, reflector, lamp holder, lamp starter and ballast equipment for 110-125, 199-216 or 220-250 volt circuits. The hood is of sheet-steel hinged to the reflector with knockouts at each end to provide for end-to-end mounting and straight-through wiring. Finish is smooth silver gray baked enamel.

Westinghouse Electric & Manufacturing Company, East Pittsburgh, Pa., has introduced a new 85-watt 58-inch type RF fluorescent lamp that produces white light and is especially designed for industrial service. The new lamps may be operated on either 105-125-volt or 210-225-volt 60-cycle ac. circuits in special equipment which provides direct current through the use of a rectifying device. The new white and blue-white lamps are interchangeable in single and twin fixture units available for their use.

Fluorescents

Van Dyke Industries, 2857-59 South Halsted St., Chicago, Ill., has announced several types of fluorescent fixtures. The new single tube type is supplied in 18, 24, 36 and 48-inch



lengths. It is recommended for suspension over work benches and for inspection work. Another type is a self contained lamp that can be screwed into the present socket as simply as a regular bulb. The new 2-tube type, available in same lengths as single tube type, is said to be especially suitable for textile installations because the lamps are so designed as to reduce stroboscopic effect to a minimum.

◆

Directory for Cordage, Twine and Duck Trade

Davison Publishing Company, Ridgewood, N. J., has made available the 1940 directory for the cordage, twine and duck trade. Containing 296 pages, it carries listings of manufacturers, mill classifications, mill agents, jobbers, hardware stores, wooden ware stores, purchasers of tents and awnings. It is a complete directory for those needing classifications for cordage, twine and duck trade listings.

Cloth Inspecting Machine with Electronic Control

Curtis & Marble Machine Co., Worcester, Mass., has announced a cloth inspecting machine with electronic or photo-electric control for starting and stopping the machine. The operator simply interrupts the electronic beam with her knee to cause the machine to stop and go. The machine is operated directly from the gear-motor. The light source on one side and the relay on the other can readily be adjusted to fit the operator, or can be changed from a high to a lower position as preferred. The machine may be quickly arranged by moving a lever to operate either by the electric eye or in the regular manner, and can be run either backward or forward by a simple moving of the lever. [A photograph and brief description of this machine appeared on page 83 of the April 1940 issue of COTTON, in the article "Cloth Room Practice".]

◆

One-Piece Housing Pillow Block

Randall Graphite Products Corp., 609 W. Lake St., Chicago, Ill., is offering to the trade a one-piece steel housing pillow block for shafts of 1 1/16-inch to 1 5/16-inch diameters. It is said to result in a quiet, lightweight, low priced bearing that is simple yet sturdy. The entire assembly consists of only three parts, housing, oil reservoir and bronze bushing with graphite filled grooves.

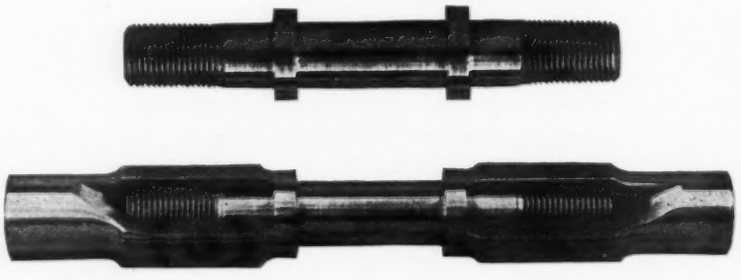
◆

Color Matching Light

Color Analysts, Inc., 610 Bloomfield Ave., Bloomfield, N. J., has announced Analyte, a white light developed for the purpose of matching colors of all types of materials and products under conditions requiring north sky light.

Double Screw Coupled Rolls

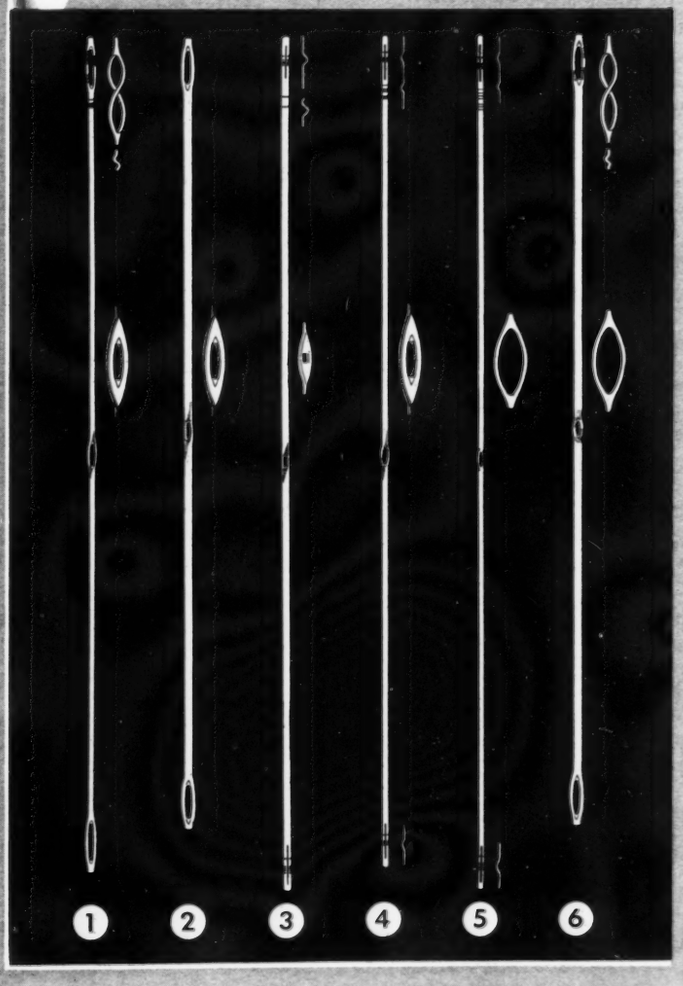
Whitin Machine Works, Southern Repair Shop, Charlotte, N. C., has placed on the market a new double screw neck roll for either roving or spinning rolls, which can be applied to any existing type of frame. It is said to eliminate snelling of bosses and has a low cost of upkeep. The rolls are positively concentric and the necks can be readily replaced when they wear out. The double collars are said to prevent rolls from creeping or binding stands.



The Eye FOR THE *Yarn*

QUALITY LOOM HARNESS EQUIPMENT

Stehedco



1. Cotton
2. Wool
3. Cellophane
4. Rayon
5. Silk
6. Worsted

It must be designed for the particular construction of a fabric regardless of texture.

It must be shaped, turned and polished to permit absolutely free travel of the warp ends through the eye, preventing chafing, jagging or obstruction of the warp threads.

Only years and years of close study and specializing, backed by the finest equipment science and money can produce, can possibly produce such a heddle—the heddle that *you* will find the most profitable.

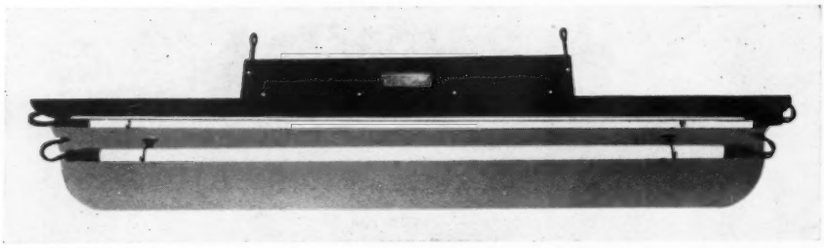
Put your heddle problems and worries up to our field representatives.

Steel Heddle Mfg. Co.

"STEHEDCO" HEDDLES · REEDS · FRAMES AND HARNESS ACCESSORIES

2100 W. ALLEGHENY AVE., PHILADELPHIA, PA.

BRANCH OFFICES ALL OVER THE WORLD



G. E. Fluorescent

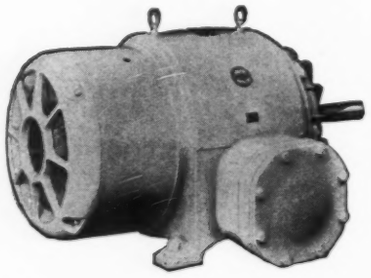
G. E. Lamp Department at Nela Park, Cleveland, has developed a new two-tube "RF" fluorescent luminaire designed especially for industrial areas.

An outgrowth of the familiar Cooper-Hewitt fluorescent lamp, the fixture consists of a self-contained auxiliary mounted on a porcelain enamel reflector. It is rated at 200 watts and operates two 85-watt RF tubes (each 58 inches long) which have a combined initial rating of over 8,000 lumens. When mounted on 10-foot centers, this new unit, according to Nela engineers, will provide adequate industrial illumination and more light from a lesser number of tubes than any other equipment now available is able to produce. The lamp department also announces RF fluorescent lamps in two different colors, namely, the original blue-white tube and a new white lamp. The latter, developing a color equivalent of approximately 8000 degrees Kelvin, is designed to satisfy needs in industry where color is a prime factor. This new white tube, measuring 58 inches in length, is interchangeable with blue-white tubes on all Cooper-Hewitt fluorescent lamps now in service.

◆

Lubrication for Horizontal Motor

U. S. Electrical Motors, Inc., Los Angeles, Cal., have developed an oil lubrication system which is now being



supplied on all open type SA and uniclosed Type SC motors larger than 30 hp. 3600 r.p.m., and 75 hp. 1800 r.p.m. A conveniently located and simply constructed oil gauge is supplied on all oil lubricated motors. The gauge is marked with maximum and minimum level which may be easily checked.

BX Armor Cutter

Ideal Commutator Dresser Co., 1094 Park Ave., Sycamore, Ill., has a new BX armor cutter which is said to eliminate nicked wires, bending of cable, etc. It is a handy pocket size and easy to use. It is said to cut quickly and cleanly without injury to wire insulation.

◆

Half Ton Lift Truck

Barrett-Cravens Company, 3250 W. 30th St., Chicago, Ill., has added a new half ton lift truck to its line. It is a general purpose lift truck, designed for handling office and supply room materials and a wide list of lightweight items in industrial plants and warehouses. It serves as a combination lift truck with a full two inches of lift for big loads that are handled on skids, and as a floor truck for bulkier single objects, barrels, cases, bales, tote boxes, small bins, etc. It has ball bearing wheels with the front wheels being of the swivel type.

◆

Hevealac

Glyco Products Co., Inc., 148 LaFayette St., New York City, has announced Hevealac, a compounded resin solution in alcohol, which is said to give high lustrous finishes on rubber, synthetics and fabrics. It can be applied by brushing, dipping or spraying. The films are practically non-inflammable when dry, and adhere strongly to most surfaces, retaining their flexibility at low temperatures.

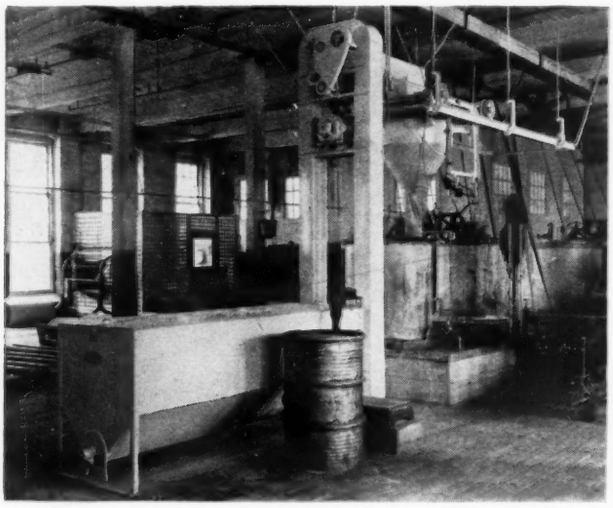
◆

Interlock Pillow Block

Dodge Manufacturing Corporation, Mishawaka, Ind., has designed a new double interlock pillow block for simplified mounting on ordinary commercial shafting where less heavy loads are to be carried than those requiring the clamp sleeve type of bearing. The new pillow block uses a special duplex Timken roller bearing with long extended inner race-ring extending completely through the housing, thus providing a completely enclosed bearing. It is made in both the expansion and non expansion type; mounting is said to be simple.

Automatic Starch Control Machine

Champion Machinery Company, Joliet, Ill., has recently developed an automatic starch control machine, which is equipped with mercury scales for automatically weighing out exactly the amount of starch to be used for each size mix. After weighing, the starch is conveyed from the machine to the kettle, allowing the slasher tender more time to devote to other work. The machine is used in conjunction with a starch bin, of any size desired by the mill, and the only effort necessary for continuous operation is refilling of the bin at intervals. If more than one size kettle is to be served, a track is built so that the machine may be used on all kettles. It is motor driven. The machine guarantees exactly the same amount of starch being put into the mix each time, is said to produce no waste, and eliminates the starch being stored on the floor in sacks.



Announcing the SPUN RAYON ISSUE of "COTTON" for July ——

A few months ago the editors announced that a cross-index of more than 30 articles appearing in "Cotton" on spun rayon and cut staple fiber was available, and since that time several hundred copies of this index have been distributed. Requests for this index are still being received.

With the demand from readers for information on processing cut staple fiber increasing, the editors have for more than two months traveled to mills making spun rayon to get first-hand information on this subject. Mill men from the South and East have been interviewed, and the editors have been taken through many plants and shown the actual processing of rayon staple fiber.

The July issue will be devoted to a symposium on cut staple fiber and spun rayon, with manufacturing specifications being given for nearly 20 plants, from the time the bale is opened until the dyed and finished product is shipped to consumers. Such technical information as methods of blending, picker speeds and settings, card settings, and how the stock is processed in the drawing, roving, spinning, slashing, weaving and finishing operations will be included.

The July issue will be a book of manufacturing procedure on cut staple fiber and its blends—one that will be read, re-read and filed for reference.

TIMELY NEWS ITEMS with a TEXTILE SLANT

Tomalino Heads New Department

Felix A. Tomalino heads the newly formed Mert department of Carolina Aniline & Extract Co., Inc., Charlotte, N. C., which will carry the company's activities beyond the textile field into other industries. Patent applications have been made on two new products that will be under the supervision of Mr. Tomalino, who has had many years of experience in the textile dyeing industry.

◆

Textile Deans Meet in Washington

The deans of the textile schools of the country held their spring meeting on Washington, D. C., on April 15-16, under the auspices of The Textile Foundation, which sponsors these meetings and other activities in the field of textile education. In addition to routine matters, the delegates heard addresses by several government officials on subjects including the effect of the war on textiles and textile fibers, the operation of the Fair Labor Standards Act, etc.

An interesting feature was recognition and tribute paid by the group to Dr. E. W. France, who is retiring as director of the Philadelphia Textile School after 56 years service in that capacity. His fellow textile deans gave Dr. France an enjoyable dinner party, and unanimously designated him as "dean of the textile school deans" with honorary life-time membership in their group.

◆

New Patents on Dyeing Machines

Morton Machine Works, Columbus, Ga., have been issued two additional patents covering features on the Morton system of dyeing machinery. One of these patents covers a feature on the company's combination raw stock and package dyeing machine, whereby this machine can be changed from a raw stock machine to package dyeing in one minute's time. An additional patent on the company's raw stock machine applies to the movable follow plate, covering the method of assembly and the operation of this movable plate; providing desired distribution of the dye liquor, eliminating white spots.

The company recently completed an annex to its building to permit the manufacture of stainless steel equipment efficiently and economically.

Breen New Sales Manager, Universal Winding Company

Albert R. Breen has been appointed sales manager of the Universal Winding Company, Providence, R. I., according to announcement by Robert Leeson, president.

During the past five years, Mr. Breen has operated his own selling agency

Mr. Breen

representing the Universal Winding Company and other well-known textile machinery and accessories manufacturers. He has assumed his new duties with Universal Winding Company, with headquarters at the company's main offices at Providence.

Mr. Breen has had a broad experience in the winding machinery business, extending over a period of 25 years, and is well trained to deal with mill problems from the technical as well as the commercial viewpoint.

Mr. Leeson, who was formerly president and sales manager, will now devote all of his time to the duties of president of the company.

◆

Modern Pioneer Award

A story concerning the Modern Pioneer awards made to many men connected with the textile industry by the National Association of Manufacturers appeared on page 76 of the April 1940 issue. The name of Franklin A. Reece of Boston should have been included. Mr. Reece received a citation for a combination driving roll and traverse guide employed on the Roto-Coner, manufacturer by Universal Winding Company.

◆

Red Cross Uses Cotton

In a recent release by the American Red Cross, it was brought out that cotton and cotton products are playing an important part in minimizing the sufferings subsequent to hostilities in Europe. Over a million and a half yards of gauze have been purchased since the outbreak of hostilities. Other items in great quantities that have been purchased are bed sheeting, knitted underwear, and absorbent cotton.

◆

Lewis Joins U. S. Textile

A. L. Lewis, who recently resigned as vice-president of the Atwood Machine Company, Stonington, Conn., has become associated with U. S. Textile Machine Company, Scranton, Pa., as sales representative. Mr. Lewis' headquarters will be at the factory in Scranton, and while in the South will be located in the Whitin building, Charlotte, N. C.

◆

In "Textile Research" for April

Although it is unlikely that silk processing will be altered radically by the discovery of Rutherford and Harris, research associates of the Textile Foundation, that there is only one silk sericin, instead of several as heretofore believed, nevertheless silk processing and sericin removal should be conducted more intelligently now that this is known. According to the report of these researchers, published in the April issue of *Textile Research*, the alleged serecins A, B, etc., are not definite chemical entities, but are substances whose chemical compositions vary with the duration of the treatment for their removal; in other words the fractions are artifacts which result from the hydrolytic decomposition of the natural serecin during its removal from the raw fibers.

◆

American Aniline Moves Office

It has been announced that the Boston (Mass.) office of the American Aniline Products, Inc., has been moved to 190 High Street.

◆

Galt of Pittsburgh Glass Retires

Hugh A. Galt has retired as vice-president of the Pittsburgh Plate Glass Company after more than 40 years of service with the company and its affiliates. He also relinquished his position as president of Southern Alkali Corporation and Columbia Alkali Corporation, subsidiaries of Pittsburgh Plate Glass Co. He will continue as a director of the parent company. Mr. Galt intends to devote his time to what he calls "unsolved problems in the chemical industry that can and should be solved".

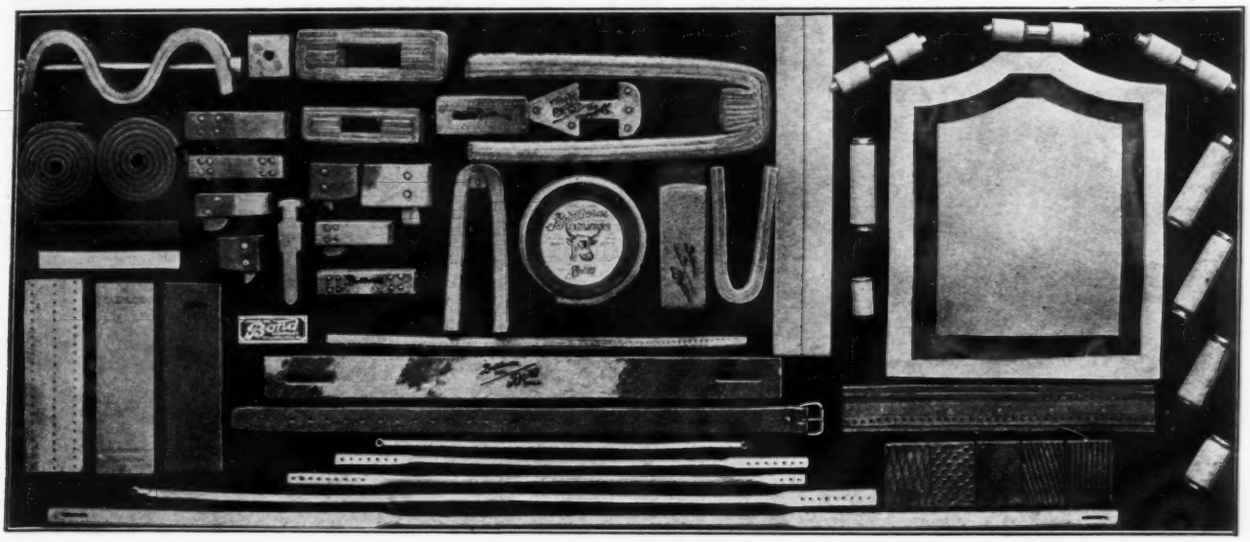
◆

American Consultants Move Office

American Associated Consultants, Inc., have moved the executive offices to 250 Park Ave., New York City. The telephone number is Plaza 3-5325.

Bondaron REG. U. S. PAT. OFF.

TEXTILE LEATHERS



PERFORMANCE— *Not Cost*—Makes Bondaron Leathers ECONOMICAL

Buying by comparison is a safe method, but too often the comparison is based on first cost rather than by *results*. Economic value can only be ascertained by actual use, when the record of performance provides enlightening comparisons.

Men, methods and machines differ. That is why Charles Bond Company is always willing to submit BONDARON Textile Leathers to intensive, practical demonstration under any mill condition where textile leathers are used.

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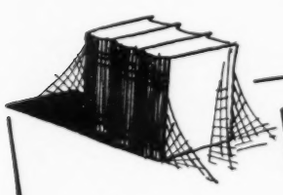

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PERSONAL NOTES
About Men You Know

GEORGE S. HARRIS, for a number of years executive vice-president of the Springs Cotton Mills, with plants at Lancaster, Kershaw, Fort Mill and Chester, S. C., has accepted the position of president of the Riverside & Dan River Cotton Mills, Danville, Va., succeeding ROBERT R. WEST, who as noted in the April issue, resigned. GEORGE W. ROBERTSON, who recently was made executive vice-president, will continue in that capacity.

F. R. GREGORY has resigned as overseer of spinning, spooling, and warping at the Cutter Manufacturing Company, Rock Hill, S. C., to accept a similar position with the Highland Park Manufacturing Company, Charlotte, N. C.

BEN LAMBETH, JR., formerly assistant night superintendent at Plant One of the Cannon Mills Company, Kannapolis, N. C., has been promoted to general night superintendent at Plant Seven of the company, located at Salisbury, N. C., succeeding ERNEST BOLICK, who is now general superintendent at the Central (S.C.) Mills. BRANDON PAYNE succeeds Mr. Lambeth at Plant One, having been promoted from night overseer of number two card room at Plant One. All are graduates of N. C. State textile school.

CLYDE F. HANNANT, formerly associated with the Bondsville (Mass.) Bleachery and Dye Works, has accepted the position as overseer of the cloth room at White Bros., Inc., Winchendon Springs, Mass.

S. B. APPLEBAUM, vice-president and secretary of The Permutit Company, New York City, has been elected a director of the company.

DANIEL E. FINKEL, formerly plant and development chemist for Armour & Company at the North Bergen, Mass., soap works, has become associated with the Quaker Chemical Products Corporation, Conshohocken, Pa., and will represent the company on its textile products in metropolitan New York and New Jersey.

ARTHUR BESSE was re-elected president of the National Association of Wool Manufacturers at the diamond jubilee of the association, held in Boston, Mass., the first part of April.

George S. Harris

MARCHANT COTTINGHAM, son of A. H. Cottingham, general manager of the Victor-Monaghan Mills, has been made assistant superintendent at the Inman (S.C.) Mills.

WILLIAM M. GROSSE, at one time connected with the Greensboro (N.C.) Full-Fashioned Hosiery Mills, and more recently with the mills of the Wallner interests in Virginia, has accepted the position as superintendent of the Gastonia (N.C.) Full-Fashioned Hosiery Mill, Inc.

DONALD COMER, chairman of the board of Avondale Mills of Alabama, has been placed in charge of organization work in Alabama to carry out the 10-year plan of economic development formulated by the Southern Governor's Conference.

WILBUR C. MUNNECKE, formerly connected with the manufacturing division of Marshall Field & Company (with plants in the vicinity of Spray, N. C.) under supervision of H. MCBAIN, first vice-president, has been elected a vice-president and has been given full responsibility of the manufacturing division.

EARL T. RICHARDS, for many years with F. P. Sheldon & Son, textile engineers of Providence, R. I., is now associated with the plant engineering department of Brown & Sharpe Manufacturing Company, Providence.

SAM TRIDMORE, formerly with Carter Fabrics Corp., South Boston, Mass., as overseer of weaving, has resigned to accept the position of overseer of weaving at Abbeville (S.C.) Mills, succeeding A. E. HOWELL, who now holds a similar position at the Victor plant of Victor-Monaghan Co., Greer, S. C.

FRED L. STILL has resigned as superintendent of Mathews Cotton Mill, Greenwood, S. C., to become superintendent of the Exposition Cotton Mills, Atlanta, Ga., succeeding R. P. SWEENY, resigned. J. T. CHALMERS has been transferred from Greenwood Cotton Mills to Mathews to succeed Mr. Still, and J. T. FICKLEN, formerly assistant superintendent at Ninety-Six S.C.) Cotton Mills, has succeeded Mr. Chalmers at Greenwood Cotton Mills.

MARION T. GRIMES, formerly agent of Chicopee Mfg. Corp., who is now connected with Cia. de Tejidos de Rosellon Medellin, Colombia, South America, returned to this country during April for a brief vacation.

J. C. PIRKLE has become associated with Quaker Chemical Products Corp., Conshohocken, Pa., representing the company in a technical sales-service capacity. Mr. Pirkle has been general superintendent of Faytex Mills, Inc., Fayetteville, N. C., and previously was superintendent of Stonewall (Miss.) Cotton Mills, and superintendent of one of the Avondale Mills plants. He will specialize in the Quaker company's products for sizing and finishing natural and synthetic fibers.

M. T. POOVEY, who recently resigned as superintendent of Hannah Pickett Mills, Rockingham, N. C., has accepted the position as overseer of weaving at the Raeford (N.C.) Cotton Mills.

JOHN LAND, formerly connected with Kendall Mills, has become secretary-treasurer of Threads, Inc., Gastonia, N. C.

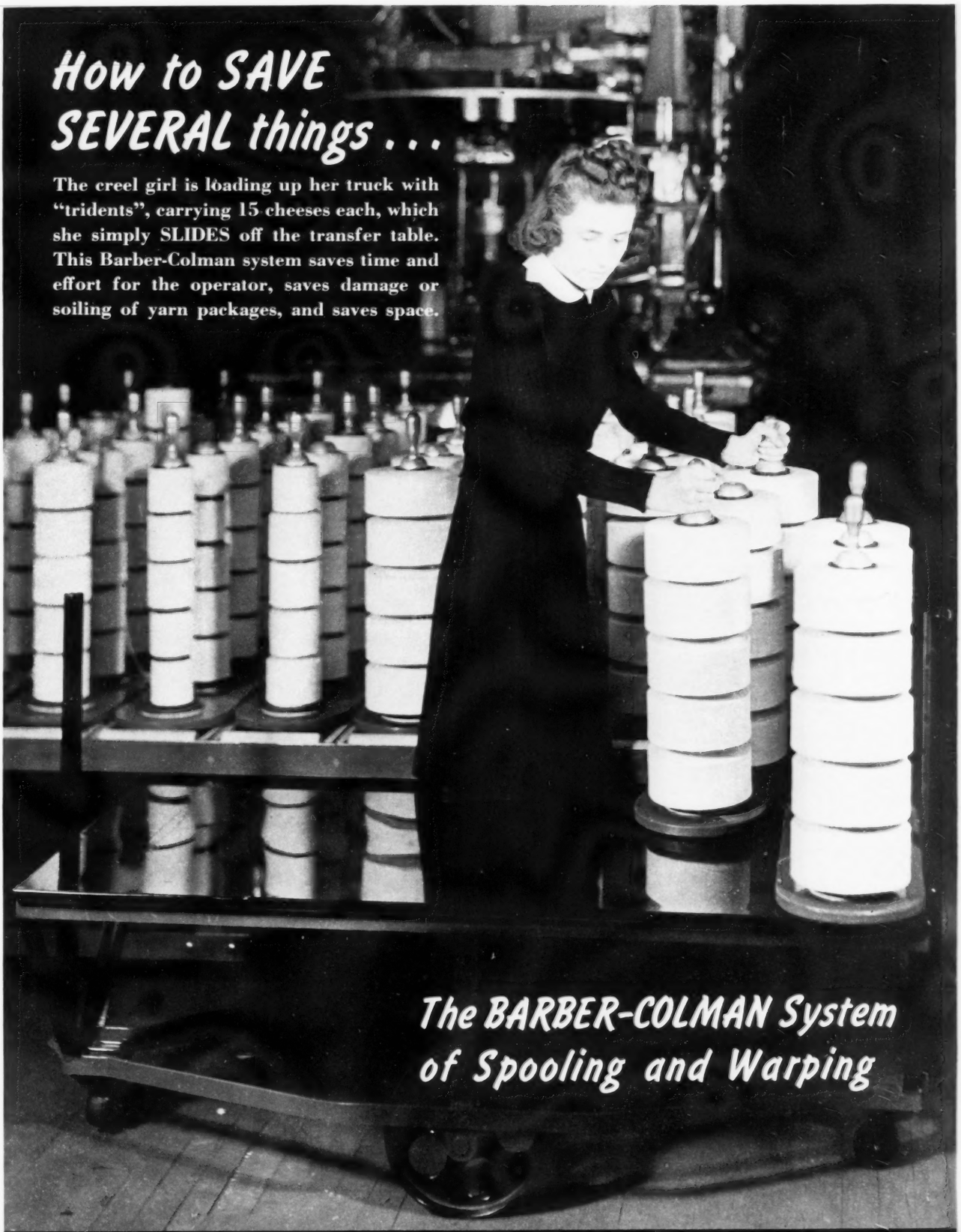
Obituary

A. WHITON VENNEMA, mechanical superintendent of The Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J., passed away at his home March 23 at the age of 53.

N. A. SHULTZ, 69, formerly superintendent of the Erwin Cotton Mills Company, Cooleemee, N. C., passed away recently.

ARTHUR W. SKINKLE, associated with Southern Mercerizing Company, Tryon, N. C., passed away recently at the age of 60.

FREDERIC L. BABCOCK, for more than 30 years editor of "Fibre and Fabric", passed away March 21 at the age of 74 as the result of an attack of pneumonia. He was responsible for many organizations of mill overseers and superintendents in New England.


How to SAVE SEVERAL things . . .
The creel girl is loading up her truck with "tridents", carrying 15 cheeses each, which she simply SLIDES off the transfer table. This Barber-Colman system saves time and effort for the operator, saves damage or soiling of yarn packages, and saves space.
The BARBER-COLMAN System of Spooling and Warping

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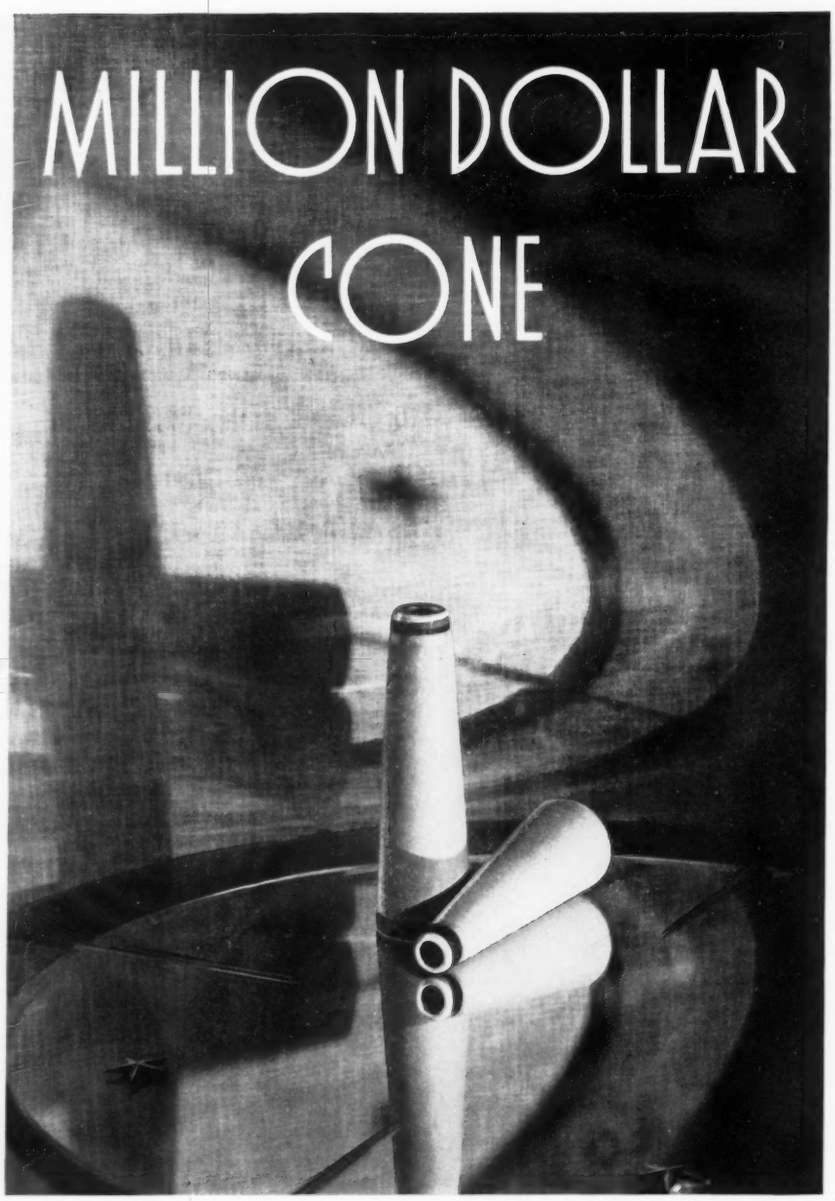

A million dollars is a conservative cost estimate of the scientific research, technical development, and productive equipment that have gone into making the SONOCO Velvet Surface Cone. Though an item of one time use, it is made to uniform micrometer accuracy, and because of its extremely low cost, its savings to the textile industry probably run to many millions . . . truly a million dollar product.

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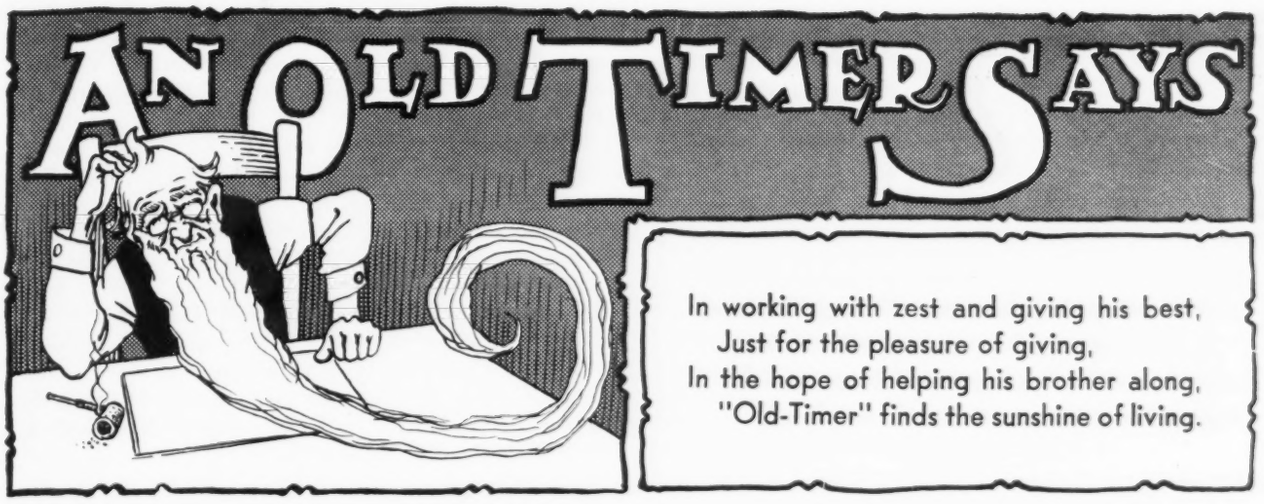
AN OLD TIMER SAYS
In working with zest and giving his best,
Just for the pleasure of giving,
In the hope of helping his brother along,
"Old-Timer" finds the sunshine of living.

—And This Sizing of Spun Rayon

(Since this article is written in conversational style, it should be borne in mind that those paragraphs in regular type represent OLD-TIMER's part in the conversation, while those in *italics* represent JIM's part.)

I heard a bunch of mill men talking today about the sizing and weaving of synthetic fibers, and some of them seemed to have rather vague ideas about the proper methods and the kinds of starches, gums or whatever binder is best, and when they got onto the subject of sizing materials, they all wanted to talk at the same time but none of them seemed to be very definite in what he said. What do you know, OLD-TIMER, *about the sizing, slashing and weaving of filament and spun rayon, also spun rayon mixed with cotton?*

Why do you ask me such a question, JIM? You know that my experience with synthetic fibers has been very limited. In fact, I simply do not claim to know anything about this subject. Certainly not enough to discuss it in public.

Yeah, I know, OLD-TIMER, *that you have what you call a very limited experience with filament and spun rayon, but I also know you have been following the subject very closely and that you quiz every man you get in touch with who is running rayon. So surely you should have some ideas which would at least be the basis for discussion, and you know that is the way we learn, so come on out with it.*

Well, JIM, there is one satisfaction a fellow can have in such a discussion and that is the fact that so few of us do know very much about the problem, that if you say things or introduce ideas that are not practical, you will not be so severely criticized as you would be if you made a mistake in discussing the slashing and weaving of cotton. But still a man does not like to "stick his neck out", when it is put down in black and white where the other fellow can study every word that is said. A man can say something in conversation and if questioned he can switch his statement around or say it in a different way and at least have some chance to defend himself—

Yes, that is exactly how those mill men carried on their conversation, OLD-TIMER, *and I can appreciate what you say about putting such a conversation into print, because to save my life I could not repeat exactly any statement one of those men made, but if the conversation had been taken down by a stenographer—oh boy, I only wish it had—some of the ideas sure were rich—*

Exactly, JIM. Now what were some of them?

One man said he wanted to take quite a large percentage of stretch out of his rayon warps, because if he didn't, the film of starch and size would be broken in the process of weaving. Imagine, OLD-TIMER, *an overseer—and he was with a good mill, too—saying to take stretch out of the yarn, when all of these years we have been trying every way we know how not to stretch the yarn in the process of slashing. Anybody knows—*

Not so fast, JIM. Not quite so fast. It may be that the man has "got something there".

What do you mean, OLD-TIMER? *You know elasticity—*

No, JIM, we just got through saying we don't know anything much about rayon—

But, OLD-TIMER, *that man—*

No buts, JIM. That man may have stumbled onto something and doesn't know what it is, just like an incident that happened to me 20 years ago.

Sam Thomas, a sizing salesman (deceased these many years), came to see me one day and was so excited he could hardly wait until a belting salesman left to tell me he had discovered a way to reduce shedding to such an extent that by the time half of the looms had the new warps in, anyone could walk into the room and see the difference. Sam said that a customer of his across the river only about 200 miles from us had gotten badly behind in his slasher room and the only way he could hope to catch up was to speed up his slashers nearly 25 per cent. After trying to persuade his boss to let him speed up, they finally decided to

speed up one of the slashers. They only had two. In less than two weeks, the weavers began asking for warps off of No. 1 slasher saying they ran so much better than warps from No. 2 slasher, so they speeded up No. 2 slasher and then the big discovery came. That shedding had been greatly reduced and everybody was happy.

Well, I'll be darned, OLD-TIMER, *guess that was a heck of a time ago when no one had controls on his slashers and it was not the speed that helped his warps but the fact they left the slasher without being burned up like most slasher men wanted to do in those days for fear the warps would be too damp.*

That's the dope, JIM. The warps contained more moisture which reduced the shedding and also left more elasticity in the yarn—

That is just what I started to say, OLD-TIMER, *about the guy who said he wanted to take most of the stretch out of rayon warps—*

Yeah, JIM, I knew exactly what you were going to say, and that is why I stopped you. Sam Thomas came to tell me how to reduce shedding, but he did not know why—he thought it was speed—the man you heard say he had found that it helped to take part of the stretch out of his rayon warps may have discovered something and doesn't know why.

You know "start-up marks" are very hard to overcome, especially in certain fabrics of rayon, and as all looms so far have been built to weave warps which have quite a large percentage of elasticity, such as cotton, wool and silk, and as rayon does not have that characteristic of elasticity to any such extent, and especially when subjected to stretch under high humidity conditions or even coming from the slasher with a large percentage of moisture left in the yarn, you know it *stays* stretched—it can't come back.

Then, OLD-TIMER, *you got the nerve to say that all we have learned about leaving all of the stretch in our cotton warps and also leaving all of the moisture we can in them, too, is no good when it comes to rayon—*

Confound it, JIM, you will not let me finish what I started out to say. Wait until you have my reasoning before you criticize so much. I may at least give you something to think about.

O. K., O. K. I thought we were going to discuss this rayon business, but I'll just sit here and listen to you.

Not at all, JIM, but we will get along much better if you will listen to me while I am trying to explain an idea. Then I'll listen to you.

O. K., that suits me.

As I was saying: the whip-roll and let-off motions of a loom depend upon the elasticity of the warp for them to function properly and if when the loom stretches the rayon warp, the warp can't come back, it may be that is one of the causes of "start-up marks". Of course that may sound unorthodox to you, JIM, but to go still further with the thought, it may be that because rayon reacts in some ways like cotton that we have been misled into believing we can treat it like cotton in *all* ways. That is, because both fibers have an affinity for moisture and will absorb binding agents such as starch, gums, glues, etc., and also sizing materials, we have proceeded to slash rayon practically the same as we do cotton. The warps do run in the loom and that's that, but we may not have realized that the similarity of the two fibers stops right there—they are both very hydroscopic but are not affected the same by this agent. Now, what do you think, JIM?

Who, me? I don't think—that is, I don't know what to think—you have me all mixed up. Two plus two is six, or something. If there is anything to the reasoning you are handing out—and frankly I think you are just dreaming—then our sizings made for cottons are not suitable for filament and spun rayon warps because you once told me that this man Thomas you mention started his career as a salesman with one of the first sizing manufacturers in the South. Along in those days, before we had much humidity in the weave rooms and none in carding and spinning. all of us had been making our own sizings, belt cements, etc., and you told Sam that if his firm could make a sizing which would attract moisture and keep the starch film from getting so dry and brittle, it would greatly improve weaving efficiency. Then sizing manufacturers began to use chlorides, both calcium and magnesium, and salts or anything to attract moisture, and in a few years the finishers began to complain about the use of chlorides in sizing and the size manufacturers had to back off of the chlorides and use other ingredients to attract moisture.

That's all true, JIM.

Sure, but now you turn right around and say or intimate that we should not use a sizing or any ingredient to attract moisture and if that is correct, then why not go further with the thought and use sizings which are compounded of materials which will repel moisture?

Now you are talking, JIM, but remember I do not say sizings which will repel moisture are the best ones to use. I only say it looks like we are on the wrong track when we simply dump into the kettle the same sizing materials we have been using on cotton because we do know that rayon is affected by moisture only in some ways similar to cotton. And this brings to mind another point which I would like to see cleared up.

When we first began to use spun rayon mixed with cotton in window curtain goods, upholstering, men's and ladies suitings, we bought cut staple rayon without even knowing the product was made from so many sources. One day the boss dyer came to me and complained that the last rayon we bought would not take the dye on some colors as well as the rayon we had been getting. It was like hunting for a needle in a haystack. We called in the salesman from whom we had purchased it and I then realized we had bought the last order of rayon from a different firm, and also learned that the last order of rayon had been made from spruce wood while what we had been using had been made from cotton linters—what I am leading up to is that whether cotton fiber rayon is more susceptible to moisture than spruce wood rayon. Can you answer that one, JIM?

Heck, no. Now I'll ask one. I understand that there are two processes of making cut rayon—with one process, the rayon is cut in the dry state, while in the other process the rayon is cut while wet. Is there any

difference in the spinning qualities of the two, and is there any difference in the breaking strength or elasticity?

That is a good question, JIM, and very likely some of the men who are running both kinds or have run both, can give us the answer. I have been told that the wet cut rayon spins better and if it does it is very likely it will also have more elasticity, because I suppose when the rayon is cut wet the fibers will crinkle some in the process of drying, and if they do they would probably lock together better in twisting; that is, the staple would resemble cotton more by being crinkled. You know you can take cans of cotton at the drawing and run the same sliver through the drawing 10 or 15 times, by taking cans from the front and carrying it to the back of the drawing and letting the cotton go through again, and the sliver will get so weak you can't pick it up without its falling apart. All of the "beard" has been stripped off of the fibers by repeated drawing.

Sure, OLD-TIMER, *everybody knows that, but it does give some argument as to why wet cut rayon may spin better than dry cut. But here is something I would like to see cleared up: I believe you told me that high viscosity starch deposits more starch on the outside of cotton yarn and penetrates less, while low viscosity starch deposits less starch on the outside of cotton yarn and penetrates more. The question is, does this same questioning apply to filament and spun rayon? If so, then which method is the better to use? Would a good film of starch and size on the outside of filament rayon have a tendency to reduce "fuzzballs" in weaving?*

Of course, such a question is rather radical in the face of all of our experiences with sizing cotton, but you gave me the idea, OLD-TIMER, *when you said we had probably gotten onto the wrong track in slashing and sizing rayon because the two fibers were affected in many similar ways.*

Correct, JIM, and by that same reasoning, I asked a chemist sometime ago to explain why he had used pure beef tallow in some experiments he had conducted on sizing filament rayon. He replied he had used the tallow for the same reason that it had always been used, viz., as a softening and lubricating medium.

Then I asked him if it was a fact that glycerine could be extracted from beef tallow, and if so, was it not a fact that glycerine would attract moisture and that the remaining tallow was not a repellent of moisture, and if so, would it not be better to use tallow from which the glycerine had been removed, in sizing filament rayon?

His answer was so technical that I cannot say yet whether he answered my question or not. He said in part, "Tallow is a chemical combination of three glycerides—palmitic, stearic and oleic. A glyceride means that the glycerine is held in a chemical combination with the fatty acids, namely, palmitic, stearic and oleic, and cannot be broken off or separated by mechanical means. These glycerides present have entirely different properties from the chemicals they are made from, namely glycerine and fatty acids. The glycerides do not have any hydroscopic action. Therefore, tallow has no hydroscopic action. * * * There may be a question asked as to which would give best results, tallow which is a glyceride, or the free fatty acids which have had the glycerine split off from them chemically."

Now, you figure out whether he has answered me or not. Understand, I did not ask him or claim that tallow had any hydroscopic action, but did say that tallow was a repellent of moisture and that glycerine would attract moisture. What prompted my question was an experience I had several years ago where the treasurer of a mill I was running insisted that we buy tallow from the meat packing houses in carload lots after we had had some trouble with our purchases of tallow. His argument was that the large packing houses were certainly in better position to furnish the rather large quantities we purchased and that he was sure we would get a much better product. Any way, by the time we had between three and four thousand looms warped up we saw something had changed our size mix and started the method of eliminating one product or ingredient at a time by testing it for purity, and we were informed that the glycerine content had been taken out of the tallow by the packing house. because that product was worth more than the other ingredients, etc. At least we did find out that pure beef tallow was better for our requirements.

Now to get back to my question, my idea was that if tallow does contain glycerine, we do know that glycerine will attract moisture, then would it be better to use a tallow in sizing filament rayon from which the glycerine had been removed?

I can say one thing, OLD-TIMER: *You sure did go to a lot of trouble to find out nothing.*

Thanks, JIM, I am about to agree with you, but wait a minute. A chemist also told me that sizing a rayon warp would not reduce the elasticity of the yarn and he may be right, but did you ever see a size or starch or any kind of dressing for a cotton warp that did not reduce its elasticity? And by heck, I'll just add a little to that question by saying that if any size manufacturer, starch manufacturer, chemist or mill ever finds a way to dress a cotton warp and retain the elasticity in the dressed warp that raw yarn has, he will have made the greatest step forward for weaving that has ever been made since we entered the era of the automatic loom and high efficiency weaving.

Now I can agree with you there, OLD-TIMER. *Because as you have so often explained, elasticity of yarn is what makes it run well in a loom and not breaking strength. Anything anyone can do to retain more elasticity will help weaving, and it is a simple matter to break a skein of raw yarn and note the stretch (elasticity) at the breaking point, and then break a skein of sized yarn (same number, of course). The breaking strength will be greater with the sized yarn, but it will break before it stretches as far as the raw yarn did. This also partly explains your theory about elasticity instead of breaking strength being the important item in weaving efficiency. And it also brings out the fact that all looms depend upon elasticity of the yarn in order for such parts as the whip roll and let-off motions to function properly. A wire warp which had no elasticity would not run in a loom—the loom would stop—those motions would jam—*

(We'll save Old-Timer's answer to Jim for the next issue, at which time further thoughts on this subject will be developed.—The Editors).

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HOW OTHER MEN MANAGE

Card Room Settings

EDITOR COTTON:

I have been a reader of COTTON for ten years, and I want to refer with kindest regards to the men that have contributed to COTTON. Their information and experience has helped me much with my work.

I have read with interest, the writings of different men. Much has been written that is profitable.

I am a man with both technical and practical experience. My experience has not been narrowed to one organization, neither has my education been confined to one man's set of books. I know that I am just a beginner and have much to learn, but if you will be kind enough to give me space in "How Other Men Manage", I should like to give to readers of COTTON, my idea of what it takes to run a card room.

First, a man must have an elementary education; next he should know something about psychology but above all he should be a close observer of human nature. The time has come when the biggest problem that confronts an overseer is that of handling help. Every overseer should complete a course in job analysis. He not only has the problem of handling help, but he must know how to select, and properly place and instruct his help. He must know how to say no, yet he must be broad-minded enough to be open for conviction on some subjects.

The following is my idea how the settings and speed on the different machines should be when running one inch staple cotton. Although they are not hard and fast rules, they are good starting points.

One-Process Pickers Settings and Speed

Back 3-blade beater	1000 r.p.m.
Back fan	1100 r.p.m.
Back beater set to feed rolls	¼ inch
Middle 2-blade beater	1000 r.p.m.
Middle fan	1100 r.p.m.
Middle beater set to feed rolls	¼ inch
Front Kirschner beater	1000 r.p.m.
Front fan	1050 r.p.m.
Front beater set to feed rolls	3/16 inch

The grid bars should be set as wide as possible, without knocking out white cotton. The top grid bars should be set about ⅛-inch wider than the bottom ones. The distance from the beater to the grid bars should vary from ½- to ¾-inch.

My Card Settings for 12-15 oz. Laps

Doffer to cylinder	No. 7 gauge
Flats to cylinder, all way	No. 10 gauge
Cylinder screens to cylinder at front	⅛-in. gauge
Middle	No. 56 gauge
Back	No. 17 gauge
Licker-in to cylinder	No. 7 gauge
Feed plate to licker-in	No. 7 gauge
Back knife plate to cylinder top and bottom	No. 22 gauge
Front knife to cylinder, top and bottom	No. 34 gauge
Doffer comb to doffer	No. 29 gauge
Licker-in screens to licker-in at nose	1/16 inch

It is a custom to set the mote knives to licker-in top No. 12, bottom No. 10, but I would prefer setting them as close as possible without rubbing the licker-in.

These settings will make good work, with a production of from nine to eleven pounds per hour, if the card is in good condition.

I prefer grinding a card with a smooth even grind for eight hours at a time, and stripping a card at least three times each eight hours. If the grinders are interested in their jobs, and feel their responsibility as mechanics of an important piece of machinery, it will be no trouble to get good work from the cards.

Drawing frame roll settings with four metallic rolls top and bottom, and a production of about 170 pounds per delivery, per eight hours. These settings are from center to center:

1st and 2nd	2nd and 3rd	3rd and 4th
1⅜-inch	1 7/16-inch	1⅝-inch

The tension on drawing ends should be slack enough until the edges will curve upward before going through the trumpet.

The roll setting on slubbers, as following should produce good work.

1st and 2nd	2nd and 3rd
1¼-inch	1½-inch

The spindle speed on all fly frames should be as low as possible to give the required production. The twist on all fly frames should never be more than the standard, or the amount the machine builders recommend, or just enough twist to pull itself in the creel of the next process, without stretching the roving. The lays per inch on all fly frames should equal about 9.3 times the square root of the hank roving.

The settings on intermediate rolls should be the same as on slubbers.

The following settings on speeder rolls, producing from 5.00 to 3.25 hank roving should give satisfactory work.

1st and 2nd	2nd and 3rd
1 3/16-inch	1 7/16-inch

Excess twist will necessitate wider roll settings, which will result in damaged leather rolls, and a decrease in breaking strength. Bad cone belts, damaged leather rolls and tight tensions are three things that should be eliminated in order to produce good work.

CONTRIBUTOR No. 7039

Comb Box Lubrication (*A Continuation*)

IN THE MAY 1938 issue of COTTON, page 128 "CONTRIBUTOR NO. 6826" asked questions pertaining to mill practice in the operation and lubrication of card comb boxes. The question covered speeds, temperature, frequency of lubrication, oil consumption, type oil being used for best results, sludge in boxes, and even "Where does the oil go which the comb box consumes", to which several men replied "on the floor".

These questions were answered by three superintendents, an overseer of carding, a card grinder, and the head of the research department of a large mill in the June, July and August 1938 issues of COTTON. It required nearly five thousand words in COTTON to tell the story of these men, but the editors felt that because of the interest in the subject the space was well devoted. Five thousand words on one subject is a lot of information; this was supplemented by a report of the Southern Textile Association meeting at Ranlo, N. C., carried on page 62 of the March 1939 issue.

Going back to the original questions, each man answering was allowed "to tell his own story". And now, the original inquirer has taken all of the replies to the questions and consolidated the information given into a readily comparable form. He has also made exhaustive tests, having in mind the original questions, and along with his compilation of the previously given answers, his tests, opinions and conclusions are drawn.

(For the reader's convenience, the opinions of the man making the recent test are in *italics*.)

Question No. 1: What is the minimum, average and maximum speed of the comb box pulleys?

	Minimum	Average	Maximum	Diff.	% of Average
Contributor No. 6837—	1380	1450	1480	100	6.9
Contributor No. 6833—	1468	1487	1506	38	2.5
Contributor No. 6834—	1400	1500	1600	200	13.3
My Experience	*—1400*	*1506*	*1590*	*190*	*12.6*

Contributor No. 6838: Did not report his own experience but stated speeds varied in general practice from 1000 to 2100 with 20 per cent variation.

Contributor No. 6835: No report but stated standard speed (1500?) is too high.

Contributor No. 6836: No report.

Question No. 2: What is the difference between the temperature of the comb box and the room in which it is running?

Contributor	Minimum	Average	Maximum	Diff.	% of Average
6837	33°	33.7°	35°	2°	6.0
6833	43°	48.0°	52°	9°	18.4
6834	38°	50.0°	60°	22°	44.0
My Experience					
Straight run medium	*25°*	*32.3°*	*39°*	*14°*	*43.4*
Straight run light	*25°*	*31.0°*	*36°*	*11°*	*35.4*
Compound	*23°*	*27.6°*	*32°*	*9°*	*32.6*

(*Question No. 2 Continued*)

6838 Did not report his own experience, but said certain oils run 20 to 25 degrees hotter than room temperature, and others, depending on mechanical condition of comb box and tre type of oil, will run 70 to 80 degrees hotter.

Question No. 3: Does higher temperature indicate more power consumption

Yes: 6837, 6833, and 6834.

No: 6835.

No opinion: 6838 and 6836.

My opinion: Probably, although this is a minor consideration.

Question No. 4: How often do you add oil and how much at each oiling? Consumption?

Contributor	Oiling Period	Amt. Added	Oil Consumption
6837	60 hours	2 ounce	3½ oz. per 100 card hrs.
6833	72 hours	2 ounce	3 oz. per 100 card hrs.
6834	120 hours	2 ounce	1.67 oz. per 100 card hrs.
6838	60 hours	1½-2 ounce	3 oz. per 100 card hrs
6835	250 hours	?	? per 100 card hrs
6836	Daily	A little	? per 100 card hrs

My own experience in this 6 months test indicates that where left to the grinder's judgment the oil consumption will be higher than necessary. The first three months the grinder added enough oil weekly, every 80 hours, to bring the oil to the proper level in the box. The following three months oil was added only as directed by myself. No higher comb box temperatures were noted by this practice. Results of test are given as follows:

FIRST THREE MONTHS
Average Hours Between Oiling

Straight run medium	*80 hrs*	*4.55 oz. per 100 card hrs.*
Straight run light	*80 hrs*	*4.17 oz. per 100 card hrs.*
Compound	*80 hrs*	*3.37 oz. per 100 card hrs.*

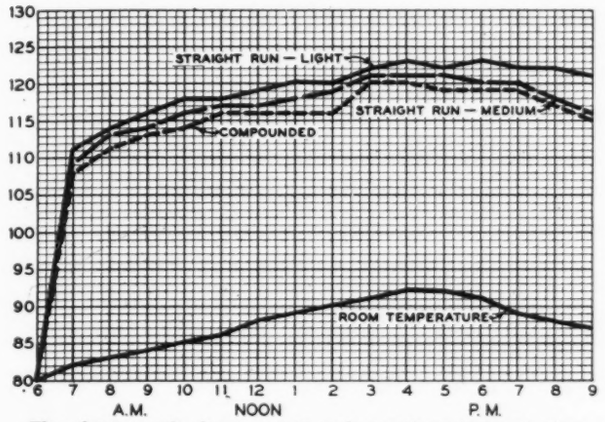
SECOND THREE MONTHS

Straight run medium	*290*	*2.6 oz. per 100 card hrs.*
Straight run light	*350*	*2.8 oz. per 100 card hrs.*
Compound	*390*	*2.1 oz. per 100 card hrs.*

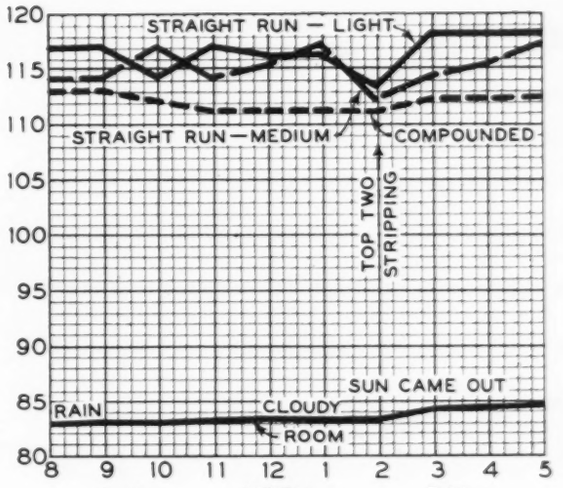
This seems to indicate that the addition of small quantities of oil frequently to maintain a high level in the box consumes far more oil than oiling less frequently and permitting a lower oil level in the boxes. I do not recommend this procedure to others without suitable tests since in some cases damage to comb boxes might result. I would like to see further reports of other men's experience and opinions on this question.

Question No. 5: What type oil gives best results Light or heavy Compound or straight run?

One contributor indicates this question should be



The above graph shows a test made on three types of oils, straight run light, straight run medium, and compound. The test was made in a fine yarn mill after the mill had stood for 10 days, so all oils were same temperature as room at 6 A. M. Readings were taken each hour, and according to the author, indications are that compounded oil tested heats more slowly and gives up heat more quickly. The solid line on the graph is for straight run light oil, the broken line for straight run medium, and the dotted (bottom) line compounded oil. See accompanying graph for behavior of oils the following day . . . . . .



Behavior of oils the following day

growing a beard it is so old. The variety of answers indicates the beard will still stand trimming.

Contributor **Opinions**

6837: "Compounded; compound oil produces less gum."

6833: "Old boxes heavy; new boxes light."

6834: "Medium straight run."

6835: "Compounded."

6836: "Straight run; compound oil gums boxes."

6838: "Mentioned oils from 25 to 140 viscosity but did not say what he is using."

My Test:

	Average Temp. Above Room
Medium straight run	*32.3° + 4.7° = + 17%*
Light straight run	*31.0° + 3.4° = + 12.3%*
Compound	*27.6°*
	Consumption Regular Oiling
Medium straight run	*4.55 oz. + 1.18 = + 35%*
Light straight run	*4.17 oz. + .80 = + 24%*
Compound	*3.37 oz.*
	Consumption Spec'al Oiling
Medium straight run	*2.6 + .5 = + 24%*
Light straight run	*2.8 + .7 = + 33%*
Compound	*2.1*

Straight run oils consumed 24-35% more oil and ran 12.3-17% hotter than compound oils.

Question No. 6: Did you examine the inside of the comb boxes for sludge, gum, stoppe doil holes, etc.?

Contributor **Opinions**

6838: "After a year some collection of matter in them—dust and gum."

.6837: "Some oil holes stopped—some sediment."

6833: "Found sludge, gum and stopped oil holes."

6834: "Some sludge collects and clogs oil holes."

6835: "Found sludge and gum."

My Experience: Was a bit different. We found the boxes we cleaned out for this test clean and no sign of sludge or gums; oil holes clear and clean. No one could recall how many years it had been since they were cleaned out and all types of oils had been used from time to time.

Question No. 7: Where does the oil go which the comb box consumes? Does amount of oil in box affect temperature?

Contributor **Opinions**

6838: "On the floor. If oil is allowed to get too low the temperature will rise and box will rattle."

6837: "Slung out when oil passages are stopped up. Low oil causes higher temperature."

6833: "On clothing and floor. Low oil causes higher temperature."

6834: "Thrown out mechanically and by vaporizing."

6835: "Evaporates. The more oil in the box the lower the temperature."

6836: "On the floor."

My Experience: According to the test we ran, keeping the oil at a high level results in a certain amount of oil dripping on the floor. Lower levels, which lubricate properly, do not raise the box temperature and save much oil.

I agree with "CONTRIBUTOR NO. 6835" *when he says, "I think every man running a card room owes it to himself and to his company to make a thorough test to prove which oil is best for his local conditions."*

We have run the test and for our conditions have adopted the compounded oil and modified our oiling procedure.

CONTRIBUTOR NO. *6826*

The editors of "Cotton" invite further comment on results of tests from mill men on this subject.

Colored Filling

EDITOR COTTON:

In our mill we run a number of different fancy styles and have many different kinds of colored filling. It is quite a job to keep all of the different colors and numbers separated, and still more of a job to get them distributed to the proper looms. We shall appreciate any helpful pointers that your readers may pass along to us on the handling of colored filling in the weave room. CONTRIBTOR NO. 7068

An Open Letter

to all cotton farmers, ginners, cotton merchants, mill buyers and seed breeders . .

EDITOR COTTON:

The writer has been connected with a fairly large cotton mill, located in the center of South Carolina, as a cotton buyer and classer for more than twelve years. During these twelve years some startling changes have developed in the cotton business. Among these changes have been new methods of buying by the mills, by having their buyers go about the territory and take up the cotton at the point of origin, thus eliminating undesirable cotton and rejections, and reducing the spread between the farmer's price and the consumer's price, because there are no brokerage fees and no middleman's profit except to the first purchaser.

Another change, and one which this writer wishes to elaborate on, is the new and improved seed which produces a staple length of one inch and longer; usually this length is longer than one inch except during unseasonable years. At the beginning of this transition this better staple cotton was sold at a premium of about 100 to 200 points over the cotton running from 7/8-inch to 15/16-inch in length. During the last ten years however, this premium has narrowed until today any shipper in the Southeast will quote inch cotton at exactly the same price as 15/16-inch cotton, and it will not be surprising if 15/16-inch cotton will not sell at a premium over inch cotton before the season has expired, simply because it is harder to find.

The seed breeders will tell the farmers, and we accept their information as being correct, that these varieties of seed will produce more lint cotton. However, they do not tell the farmers that they have neglected the seeds which produce 15/16-inch cotton and devoted all their time and talent towards improving the longer cotton seeds. We think it would be most unreasonable to feed one child, starve another and expect both to grow and become healthy.

There are a number of mills near the writer's vicinity which use upwards of 150,000 bales of 15/16-inch annually. These mills are finding it increasingly hard to find 15/16-inch cotton, however, and some of them are forced to buy a good part of their cotton from the West. We think there is room in our cotton fields for a variety of cotton instead of having one variety everywhere, and believe that the seed breeders should put their efforts towards developing a better seed which would produce 15/16-inch cotton so the farmers who live in the vicinity of mills requiring this type of cotton might supply these needs, at a price which would compare favorably with other cottons. If the yield could be increased only a small amount, this cotton would be made attractive for the farmer because the ginning invariably turns out better than the longer staple varieties.

We think this situation is fast reaching a point where a change will have to be made, and urge all farmers, mill buyers and seed planters to give serious consideration to this problem.

CONTRIBUTOR NO. 7075

Washboard Shuttles

EDITOR COTTON:

"CONTRIBUTOR NO. 7033" in his question on page 87 of the March issue of COTTON has asked for the causes and remedies of wavy or "washboard" shuttles.

The causes of wavy and washboard shuttles are numerous, and loom adjustments, or settings as they are termed in the mill, will usually eliminate this evil. But only on one condition and that is if the loom is in correct alignment. Lining a loom means having the race plate practically water tight and in line with the end lay plates, the reed squared to the lay and race plate and in line with the box back, and the lay coming forward the same distance on both ends of the loom. It is only when these conditions exist that a loom fixer can begin to fix looms. With the loom out of alignment he is only patching or doing a makeshift job regardless of what he is doing to the loom.

One point to mention before going on to the causes that the loom fixer can prevent is that of using reeds made by different manufacturers. It is important that the mills use reeds that are uniform as to thickness and depth. Otherwise it is impossible to have the loom alignment remain the same when warps are changed. This, of course, will cause the shuttle to be planed or ridged on the back.

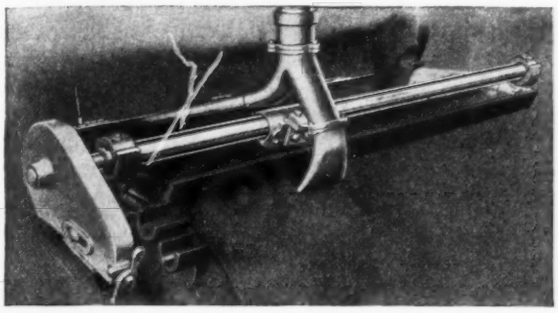
While on reeds we may as well mention those that are out of line due to the loom fixer. These overfaced or underfaced reeds are caused by the loom fixer tapping the ends or outside ribs on the reed in order to make the loom run properly, or, as the loom fixer might say, to stop it from cutting the shuttle on the back. That may work until that particular pattern has to be cut out of the reed. But then the reed gets turned over in the drawing-in room and the reed is out of line with the box back again. If the loom fixer does enough tapping he probably will have a busted shuttle to show for it rather than a wavy shuttle. If the loom is properly lined there is no reason to have to tap these ribs back to make the loom run or to keep the shuttle in good condition.

Anything that will cause the throw of the shuttle across the loom to be uneven or crooked will cause the shuttle to be wavy—at least that has been my experience.

The movement of the lay is eccentric due to the placing of the crankshaft box below the level of the bearing on the lay sword. Thus the lay attains its maximum speed just before the crankshaft reaches top center, at top center and just past top center. Then the lay begins to slow down. The reason for this, as we are concerned with it, is to allow the shuttle time enough to get across the loom. As the shuttle leaves the box the race plate is not level, but is slanting toward the back, and the shuttle, due to the force of gravity, should be pressed lightly against the reed and be guided by it across the loom into the other box.

To back track a little—the picking cams in most instances are set so that the loom starts picking when

Another answer to this question appeared on page 130 of the April issue. Other comments will follow.



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the crankshaft reaches top center. Thus the shuttle will come out of the box as the lay reaches its top speed. As the shuttle enters the shed its speed is greatly reduced by coming into contact with the warp yarn. The crankshaft has passed beyond top center as the shuttle enters the shed. Thus the reduction in speed of the lay and the shuttle taking place at the same time will allow the shuttle to follow the reed across the loom in a straight line. And the whole surface of the squared back wall of the shuttle should be in line with the reed all the way across the loom. This prevents the shuttle from being chafed or "washboarded" on the back.

If the loom is set for early timing of the picking motion the shuttle is delivered out of the box before the highest speed of the lay has been reached. Thus the shuttle speed and the lay speed will be out of time and the reed will have a tendency to move away from the shuttle, causing the shuttle to zigzag across the lay, which will plane the shuttle the full depth of the squared back shuttle wall within a short time.

The picking cams on the loom are designed so that the shuttle is started moving out of the box slowly. As the pick ball rides up the pick point this speed of the shuttle is gradually increased until the shuttle is released by the binder and box front leather. This slow starting of the shuttle results in what we call a smooth even pick, which is of course necessary if the shuttle is to move across the loom in a straight line. Now suppose for instance that the picking cams are set correctly, but the lugs have slipped and there is space between the long lug and picker stick with the loom on top center. Then as the loom picks the stick is struck a powerful blow by the lugs as the pick ball is part of the way up the pick point before the lug contacts the picker stick to cause the shuttle to start moving. This blow on the stick reacts on the shuttle to cause it to jerk in starting, with a resultant uneven movement across the loom. The action of the rising pick ball should impart a driving force to the picker stick rather than a sharp blow.

Practically the same thing happens to the shuttle as far as the path of the shuttle across the lay is concerned, when the shuttle is either bouncing in the box or not driving all the way in the box. For the picker doesn't contact the shuttle until after the pick ball has started up the pick point.

That brings up the question of boxing the shuttle, which in itself is a whale of a big subject. So we will pass over it other than to say that the shuttle has to be properly boxed or else there is an uneven throw of the shuttle as a consequence. The binder and box front leather should release the shuttle at the same time for the shuttle to have a straight throw across the loom. If the shuttle box is too wide at the mouth then the binder tends to press the nose of the shuttle out toward the front of the loom and the shuttle fish tails out of the box as the loom picks. The tension on the protector rod spring and on the binder spring should be at a minimum, with only enough spring on the protector rod for correct operation of the motion, as any increase over this amount tends to cause the binder to grip the shuttle, making it hard for the shuttle to leave the box as the loom picks. The check for the shuttle should be made with the check strap.

The picker being parallel determines to a great extent the path of the shuttle across the loom. Let me say that unless the picker is put on the stick without stretching it or pounding it out of shape it will be a dickens of a job to parallel it correctly. A picker put on like this may be paralleled at the time it is put on, but it is practically impossible to keep it paralleled, as it always has a tendency to ride up the picker stick the amount it was stretched, making it too high and the nose or front end of the shuttle strikes the opening in the lay, through which the filling fork works and is deflected. A low picker raises the front end of the shuttle and allows the back end of the shuttle to strike the yarn, which only results in an uneven throw, if we are lucky enough not to get a busted shuttle. To parallel the picker and to have the path of the picker set correctly in respect to the shuttle calls for a good parallel block and tongue. The picker should never be set at an angle toward front or back of loom. When boxing the shuttle the shuttle should be centered in the box and then the picker set to the shuttle if we are to get a straight throw of the shuttle.

The timing of the shedding cam and the setting of the harness effect the path of the shuttle. If the shedding cams are set too late the shuttle will have to force its way ino the shed. This greatly retards its speed and allows the reed to move away from the shuttle. If the harness are set too high off the race plate the nose of the shuttle will be lifted as it enters the shed. The same thing takes place if the temples are set too high. Both of the last mentioned points will cause the shuttle speed to be reduced. Forming a small shed to reduce the yarn movement and strain will allow the shuttle speed to be reduced by rubbing against the yarn. Changing the line of warp from the whip roll to the sand roll to put face on the cloth can be carried to an extreme, giving a slack top shed that slows the shuttle down.

Too much power on the loom, force on the pick, tends to make the flight of the shuttle erratic. The lug assembly, long lug, lug block and short lug should be on a line approximately parallel with the floor. Being set at a decided angle either up or down will make the picker stick jump as the loom picks. The force of the heel spring should be minimized as undue tension at this point not only causes the power on the loom to have to be increased but the picker stick lags slightly in starting, especially with a springy stick, which allows the stick to rise up slightly before starting the pick. A badly worn parallel foot or shoe makes it impossible to correctly parallel the picker for its full stroke. A worn bumper can cause the shuttle to be deflected. A badly worn picker lets the shuttle knurl go too deep into the picker which makes it hard to keep the shuttle path true. Worn or loose rocker shaft or bearings allows vertical movement in the whole lay which deflects the shuttle. Worn or loose pitman arms or eccentric pins lets the lay have a slight movement that will effect the passage of the shuttle across the loom. The same thing is true when the crankshaft boxes are worn. The transfer motion should not effect the position of the shuttle in the box as a change takes place. Check the setting of this motion so as not to allow the shuttle to be pulled away from the picker, the transfer hammer to strike the front or back wall

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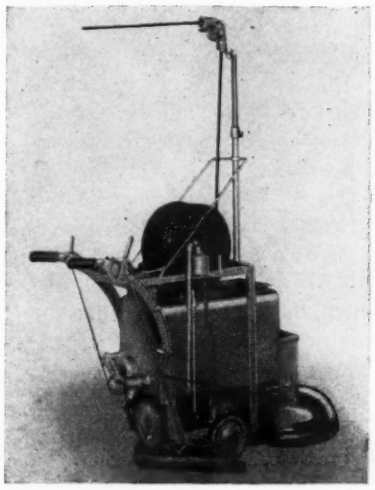

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of the shuttle or the transfer hammer to go too deep on the change.

Suffice it to say then that some of these loom faults mentioned could cause the shuttle to be thrown out of the loom or other troubles to develop before the shuttle could ever run long enough to become washboarded. But looms are as cantankerous as humans and some of those shuttles will run in some of those looms in spite of everything and washboard.

CONTRIBUTOR No. 7034

Who Fills Batteries?

THE following inquiry was received by the editors of COTTON: "We have a weave room with 368 looms, which is on coarse goods with colored stripes and borders, and we are continually changing patterns. We have 24 looms to a weaver, with the weaver filling his own batteries and taking off the cloth on the set of looms. Our filling numbers are 6½s and 9½s. The number of looms one weaver may have on 6½s filling may be 12 one day with 12 looms on 9½s, whereas the next weaver may have 8 looms on 6½s filling and 16 looms on 9½s, and the sets may vary from day to day.

"One week we may have over half of our looms in the room on 6½s filling and the balance on 9½s. The next week it may be that the room is more unbalanced and we never can get either one of the filling numbers all together.

"I have been trying to work out some system to see if it would pay us to have battery fillers and give weavers more looms.

"As yet I have not done so."

This inquiry was passed along to several men, and two of the answers are contained herewith, others will appear later.

Mill No. 1's Answer: I would think the best way for this man to handle his problem would be to put the weavers to doing nothing but weaving, giving them full weaving jobs and putting in regular battery hands to handle the filling. He can figure what he considers a full battery job, which usually runs about 600 bobbins placed in the batteries per hour, and work out a battery load on this or some similar basis.

It is much easier to put in or take out the battery hands from day to day as the filling numbers change than it is to be continually changing the weavers' load. If this mill worked on this basis I believe they would like it much better than their present arrangement, and I think it would be much fairer to the weavers and the battery hands than the present system.

Mill No. 2's Answer: Concerning the possibility of using battery hands instead of letting the weavers fill their own batteries in the weave room, this man expresses a common problem; he cannot make up his mind, but the experience of others indicates he will be happy with the result after using battery hands.

With reference to keeping the filling separate, where only two filling numbers are being run it would probably be the simplest thing to paint the tip of the quill and restrict that mark to the least used filling. Your inquirer does not mention such a difficulty so I assume that the numbers may be readily distinguished in practice.

The product is not sufficiently identified to permit of any estimate of the probable loom assignment for weavers, but I assume that they could be given sufficient looms to keep them busy without doing any battery work. For a preliminary study your correspondent might check up on some weavers and find out how their time is divided. Then if they are running 24 looms with one half their time on battery filling, they may be expected to run 48 looms with the assistance of battery fillers.

If there were no elimination of workers, then the total saving would depend upon the number of jobs converted into battery filling at rates that are about three-fourths of those paid the weavers. Thus, the saving might be set out as one-fourth of the pay on the jobs changed from weavers to battery fillers.

In practice it is usually found that further savings can be made when the work is divided by skill. The battery hand job runs about 9 quills per minute, with considerable extra production possible with very little extra effort. The day-to-day fluctuation of these yarns on any battery fillers' set should not cause unusual difficulty.

Weavers' STA Meeting

(*Continued from page* 83)

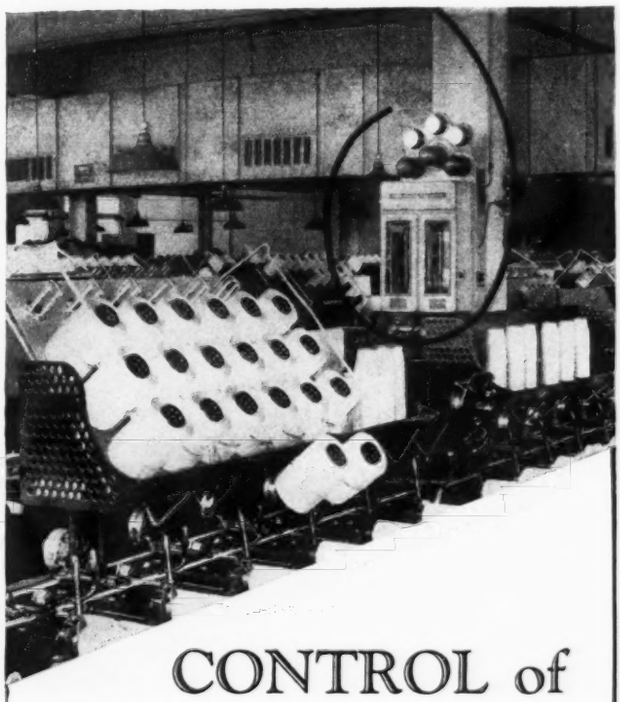
of Crompton & Knowles suggested that much of this is caused by having too much tension on the protector rod spring and binder spring, which cause the shuttle to be deflected from a straight line. It was also brought out by Mr. Bolt that there is available a new box back which is beveled near the reed so as to allow the box back to be out toward the reed by the thickness of two drop wires. Other things said to cause washboard shuttles are pick cams improperly set, too much power, improper stroke of the picker stick, and variation in reed thickness.

A question injected was "Why put face on print cloths when the finisher prints the side that happens to be up?" In answer to this, Mr. Bolt stated that face is not necessary unless the cloth is to be dyed a solid color. The concensus of opinion was that face is put on print cloth because the buyers see the samples before they are printed, and a smooth, soft face on the cloth has a good psychological effect on him, which is of intrinsic value to the manufacture selling the cloth.

"How is the best way to go about laying-in a set of colored stripe shirting on the slasher?" was the next question. J. H. Franks stated that he makes a warper pattern from the drawing-in-draft and lays it in on the slasher exactly as it is to be drawn in the pattern for the loom.

Elimination of creases in pigment taffeta on a Model K loom was the next subject for discussion. It was explained that the cloth should be started back on the cloth roll properly when doffed, that the cloth roll should be kept level at all times and that a low take-up would help eliminate creases.

This concluded the technical discussion, and in a brief business session, J. H. Burgess, superintendent of weaving, Gayle Plant, Springs Cotton Mills, Chester, S. C., was elected chairman of the weaving division for the ensuing year.



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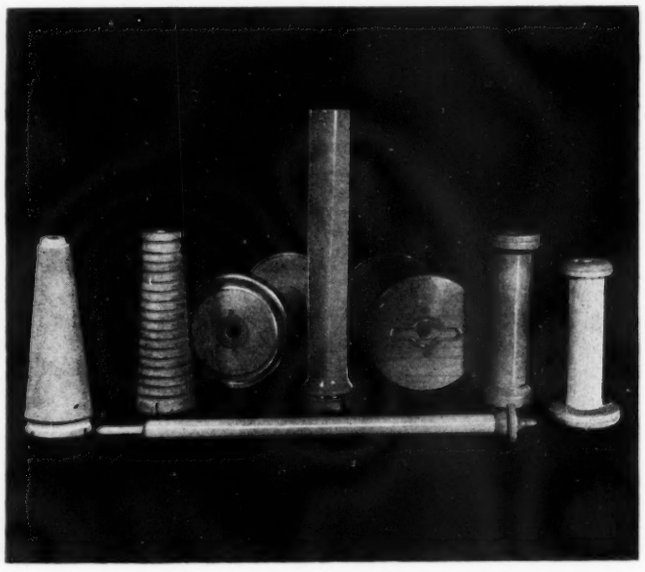

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354. Vacuum Cup Pulleys—Leaflet describing the new Vacuum Cup Pulley which gives greater production, less power cost, less maintenance cost, and much longer life to belts and bearings. Vacuum Cup Metal Pulley Company, Inc., Detroit, Mich.

355. Air Conditioning in Cotton Spinning—A technical discussion of the need of adequate humidification and controlled air change in the spinning room of the textile mill of today. Ask for Bulletin 539. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, North Carolina.

356. Parks Textile Specialties—A 14 page bulletin with brief descriptions of the Parks line—Automatic Airchanger—Central Station and Unit Air Conditioners—High Duty, Turbo and Turbomatic Humidifiers—Automatic Regulation—Traveling Cleaners—Portable Dustless Card Stripper—Humidifier Valves and Accessories. Parks-Cramer Co., Fitchburg, Mass., and Charlotte, N. C.

357. Caro-Gant—The Original 100% Active Warp Dressing. Attractive folder describing Caro-Gant the Warp Dressing that makes stronger more elastic warps with a maximum breaking strength and a minimum reduction in elasticity. Hart Products Corp., New York City.

358. Rhonite Emulsions—Attractive bulletin describing the Rohm & Haas complete line of Urea Formaldehyde Resins for Textile Finishing. Rohm & Haas Co., Philadelphia, Pa.

361. Thaumaphos — The textile detergent — Seven page booklet describing Thaumaphos, the wonderful phosphate. Included is a list of the Thauma brands and a survey of their uses in the wet finishing of textiles. Detergent Products Corp., Atlanta, Ga.

362. Leather Belting Calculator—Handy and attractive calculator for determining belt speeds, horsepower per inch of belt widths, etc., will be sent free on request. J. E. Rhoads & Sons, Philadelphia, Pa.

363. Form 769, Condensed Catalog—a 40 page pocket size booklet illustrating and describing sewing machines adaptable for practically all phases of the needles trade. Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City.

364. The Superlock—Form 828—an attractive two-color illustrated 6-page folder describing the "Fastest Overseaming Machine in the World". Willcox & Gibbs Sewing Machine Co., 658 Broadway, New York City.

365. Catalog No. C-306—a 32 page Standard Conveyor booklet showing numerous actual installation photographs on roller, belt, slat, chain, wheel, live roller, push bar and vertical lift conveyors—also spiral chutes, tiering machines, portable pilers, lower-lifts, record lifts and pneumatic tube systems. Standard Conveyor Co., North St., St. Paul, Minn.

366. Houghto-Size SR—Leaflet describing a new sizing compound for spun rayon warps which provides high breaking strength, greater elasticity and increased weave-room production at low cost. E. F. Houghton & Co., Philadelphia, Pa.

367. Rayon Oils—Leaflet describing three Houghton products used for throwing rayon filling yarns for weaving, as softeners in gelatin and similar solutions used for sizing and as softening oils for yarns, knitted and woven fabrics. E. F. Houghton & Co., Philadelphia, Pa.

368. Surfax W.O.—Leaflet describing a new surface-active chemical which possesses unusual wetting out and softening properties. E. F Houghton and Company, Philadelphia, Pa.

369. Lunkenheimer Catalog 78—136 page catalog describing a complete line of Bronze, Iron and Steel Valves, Boiler Mountings, Lubricating Devices, Air Devices and other specialties. Also included is a section on the therme-dynamic properties of steam, and a table of shipping weights. The Lunkenheimer Co., Cincinnati, Ohio.

370. Notes on Exsize—Attractive new booklet describing the use of Exsize for desizing fabrics. Included is a review of general sizing and finishing and a flow chart showing the cotton and rayon finishing processes. Pabst Sales Company, 221 North LaSalle St., Chicago, Ill.

371. Aluminum in the Chemical Industry—Published by Aluminum Company of America. Fifty-two pages. Text and illustrations covering adaptability of aluminum and aluminum alloys to chemical industry applications and characteristics governing recommended uses. Aluminum Company of America, Pittsburgh, Pa.

372. Stewart Fences—Illustrated catalog which is a complete text on the subject of fence for industrial uses. Stewart Iron Works Company, Inc., Covington, Kentucky.

373. The Bowen Spinner's Record Book—Handy leather bound notebook which contains a world of useful information as well as tables for keeping accurate spinning data. U. S. Ring Traveler Company, Providence, R. I.

374. Fidelity Spooling Machines—Illustrated booklet describing the Fidelity Spooling Machine and outlining its many applications in the textile industry. Fidelity Machine Company, Philadelphia, Pa.

375. The Fidelity 3 Carrier Back Winder—Folders describing this new backwinder which is used to recover silk in press-offs from full fashoned three carrier leggers. Fidelity Machine Co., Philadelphia, Pennsylvania.

376. Leather Booklet No. 202—Attractive booklet illustrating and describing BONDARON Special Tanned Leather as used in various forms such as Check Straps, Pickers, Harness Straps, Lug Straps, Bumper Straps, etc. Also describes BONDARON Special Tanned Solid Round Leather Belting, Flat Belting and Standard Oak Tanned variety of Leather Belting. Chas. Bond Co., Philadelphia, Pa.

377. The Morton System—Illustrated literature describing the Morton Improved double circulating raw stock dyeing and bleaching machine, the Morton horizontal revolving beam and package dyeing machine and beam bleaching machine, the Morton vertical package and roving dyeing machine. Morton Machine Works, Columbus, Ga.

378. The Victor Circle-D Traveler—Pamphlet describing this important advance in traveler design. Victor Ring Traveler Company, Providence, R. I.

29. Continuous Card Stripper—A 20 page booklet describing in detail continuous card strippers, their advantages, the power required to operate, etc. Saco-Lowell Shop, 147 Milk St., Boston, Mass.

30. Lubrication of Textile Machinery—32 pages illustrated. Data covering the economical lubrication of all textile machines. New York & New Jersey Lubricant Co., 292 Madison Ave., New York, N. Y.

62. Rubber Products for the Textile Industry—A 40 page booklet giving a wealth of information on the proper selection, installation and operation of rubber belts, together with charts, showing horsepower rating, pulley sizes, V-belt sizes, also information on all types of hose and rubber covered rolls used in the textile industry. Manhattan Rubber Mfg. Division of Raybestos-Manhattan, Inc., Passaic, N. J.

64. SKF in the Cotton Mills—24 page bulletin describing bearing installations for practically every machine in the textile industry including roller bearing spindle and tension pulley. SKF Industries, Inc., Philadelphia, Pa.

77. Bulletin S 200—Illustrating and describing the new Reeves Variable Speed Drive for spinning and twister frames, explaining its many distinct advantages and giving charted results of exacting tests. Reeves Pulley Company, Columbus, Indiana.

88. Dayton Cog Belt Catalog—A 32 page booklet full of vital information on power drives, plainly and simply assembled and arranged so that anyone can select the proper standard drive for any condition. It also provides data for the calculation of drives where acquired. The Dayton Rubber Mfg. Co., Dept. C-11, Dayton, Ohio.

110. 3-in-One Oil for Industrial Uses—showing the many industrial uses and advantages of this oil. A. S. Boyle Co., Jersey City, N. J.

116. Arcy—Telling in an interesting way the story of Arcy, which completely liquefies ordinary thick boiling pearl starch and its many advantages. Drake Corporation, Norfolk, Va.

117. Anti-Friction Bearings as Applied to Spinning, Drawing and Twisting Frames—This bulletin shows with detailed drawings how a simplified design of roller bearing applications is made to replace the plain babbitt bearings and lists the advantages that are gained. It deals primarily with better continuous production and in consequence freedom from equipment care and repairs. Hyatt Bearings Div., General Motors Corp., Harrison, N. J.

120. Goodyear Mechanical Rubber Goods Catalog—40 page catalog giving practical information and tables helpful in the selection of the proper belting, hose or packing to suit the requirements of the mill. Goodyear Tire & Rubber Co., Akron, Ohio.

139. Textile Detergents—Theory of the use of alkalis and control of pH—This 32 page booklet explains in simplified manner for the benefit of the layman the chemical processes that take place in using textile detergent in the finishing of textile goods. It contains many useful tables and data. Detergent Products Corp., Peachtree Bldg., Atlanta, Ga.

141. V-Belt Engineering Data Book—Over 50 pages of pertinent engineering information including data on selecting a V-belt drive design of special V-belt drives, numerous standard tables, charts and belt and sheaves list prices. Manhattan Rubber Manufacturing Div. of Raybestos-Manhattan, Inc., Passaic, N. J.

154. Johnson Bronze Bulletin No. 340—showing over 800 sizes Johnson general purpose bronze bushings. Johnson Bronze Co., New Castle, Pa.

155. Link-Belt Catalog 1574 on the P. I. V. Gear—giving details of this positive variable speed control. Link-Belt Co., 307 N. Michigan Ave., Chicago.

156. Link-Belt Engineering Data Book No. 125—showing features and giving engineering data on Link-Belt silent chain drive. Link-Belt Co., 307 N. Michigan Ave., Chicago, Ill.

157. Grading Rules and Complete Specifications for Laying and Finishing Maple Floors—Maple Flooring Manufacturers' Association, 1794 McCormick Bldg., Chicago, Ill.

163. Roto-Koner—Bulletin describing the new No. 44 Universal Winder, known as the Roto-Koner for winding knitting yarns, which has many new and distinctive features. Universal Winding Company, P. O. Box 1605, Providence, R. I.

164. Johnson Rotary Pressure Joints—Bulletin describing the rotary pressure joint which requires no packing, no lubrication and no adjustment, giving installation and maintenance instructions, types, sizes, dimensions and prices. The Johnson Corp., Three Rivers, Mich.

168. The Tube-Tex for Tubular Knit Goods—Bulletin describing this modern machine which extracts, processes, dries, conditions and folds in one continuous operation, lowering costs, saving labor, power, space and waste. H. W. Butterworth & Sons Co., York and Cedar Sts., Philadelphia, Pa.

170. Gates Textile Accessories—showing the increased efficiency and economy to be secured through the use of Gates cone belts, evener belts, card bands and loom binder cushions. The Gates Rubber Company, Denver, Colo.

171. Design of V-Belt Drives—48 page booklet full of valuable tables and data showing the type, number and design of V-belts that will give the greatest efficiency on each particular drive. The Gates Rubber Company, Denver, Colorado.

176. Sonoco Products—A 60 page illustrated booklet giving descriptions, specifications and charts of the many Sonoco products, including bobbins, cones, tubes, cork cots, roving cans, spools, rolls, etc. Sonoco Products Co., Hartsville, S. C.

184. Speed Control Handbook T-35—new reference book in variable speed control, said to be the most complete and helpful book on this subject ever published. 112 pages and more than 200 illustrations of interest to every production executive, purchasing agent, superintendent, overseer and master mechanic. Reeves Pulley Co., Columbus, Ind.

185. Dulux—The White Finish That Stays White—New book describing the new ten-point finish for factory walls and ceilings, the finish that stays whiter, stays cleaner and stands repeated washing. E. I. du Pont de Nemours & Co., Finishes Division, Wilmington, Del.

187. The Wildman Single-Head Full-Fashioned Hosiery Machine—Literature on request from the Wildman Mfg. Co., Full-Fashioned Division, Norristown, Pa.

COTTON, Grant Bldg., Atlanta, Ga.

Please send me, without obligation, free booklets described in the May 1940 issue of COTTON.

(*Fill in here numbers you select from both pages*) .....

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List Items You Want and Tear Out and Mail Coupon Now!

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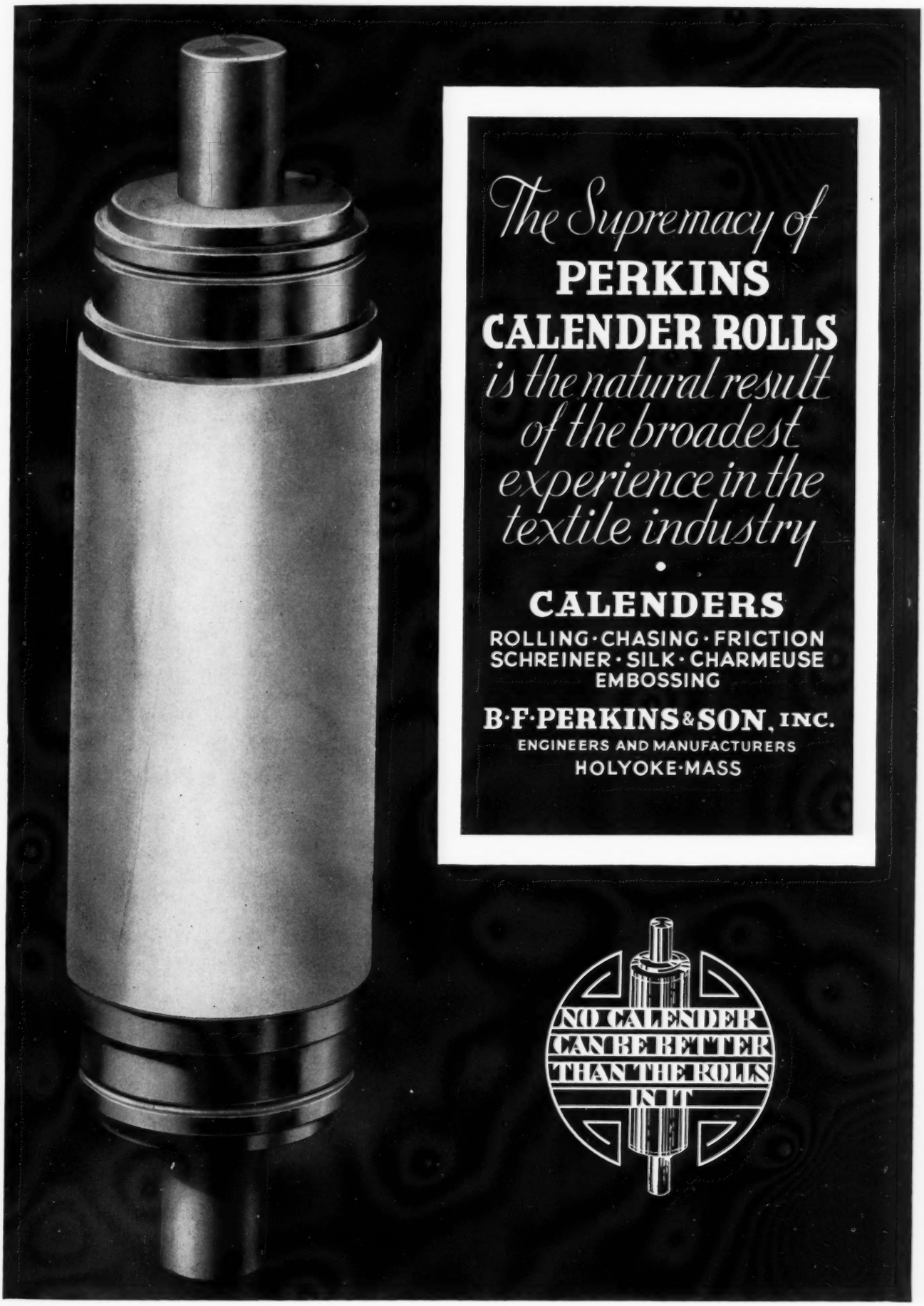
Please be sure to fill in your Firm's Name and your Position on the Coupon. This service cannot be extended to you unless this information is furnished.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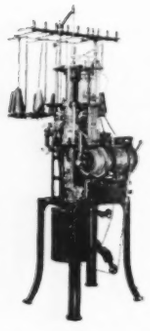


THE MACHINE THAT MADE A FASHION

The fashion we are talking about is the women's high sock for sport . . . and the machine that made it possible is the Scott & Williams' Komet Links-and-Links Machine. And if you don't believe that this high sock, with its rugged, bulky knitting, *is* a fashion—a growing, nationwide sports fashion—read about the excitement and activity it is causing merchandising and publicity circles.

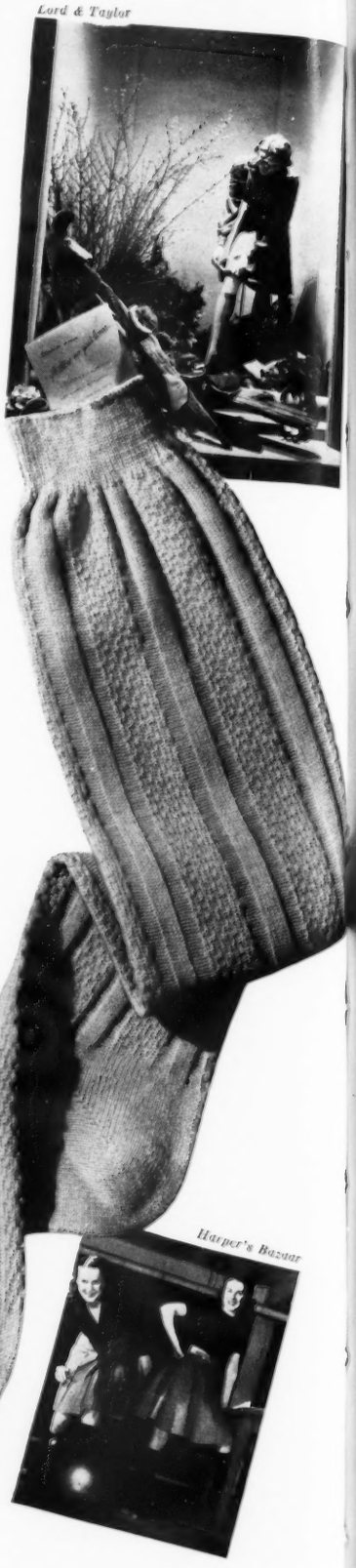
"Bare Knees for the Country," says Lord and Taylor, and gives a fashion show, pages of newspaper advertising and five Fifth Avenue windows to outfits designed from shoes to hats to focus attention upon the knee-high Links-and-Links socks of the wearers. "Away with the skirt that hampers your stride. Our charming bare-knee fashions have taken the country by storm." "Knees are in because they're out," says Harper's Bazaar, illustrating the statement with a full page photograph of two young women in the briefest of gray flannel skirts and blue blouses or jerseys to match their blue knit Links-and-Links high socks. "Bare knees in the spotlight," says the New York Herald Tribune and devotes half a column to the subject. "Bare knees to play in . . . bare knees and bright colored knee-length hose to match your shirt," says the New York Sun. "Bare knees for bowling," in the New York Journal-American and a photograph of a chic young woman in high socks chalking up her score. High socks for golf and hiking. "Knees Out in the Open This Spring," reports Women's Wear Daily.

"They're smart," says the feminine public of the new fashions. "They're sensible," says the male contingent.

"We've put the knee sock on the high school and college girl," says the buyer of a Fifth Avenue shop. "Now we are going to put it on the woman of from twenty to forty." "Every woman who wears anklets will wear the high sock," prophesies the vice-president and style head of a leading store. "To be smart the knee sock MUST have bulk," says one of the country's foremost stylists, establishing the fact that it must be of Links-and-Links (or hand) construction. This new fashion is just at its beginning. In the fall the high sock will be in greater demand than ever because it complements autumn sport costumes so perfectly.

The high sock is only *one* item produced on the Komet Links-and-Links Machine, one of the most versatile machines ever made—if not the *most* versatile. Equip your mill now with the Komet Links-and-Links machine. It means sound, profitable business in many active markets. Our staff will answer all your questions about this and the other Scott & Williams Machines.

"This is the 75th year of the Scott & Williams Machine Age"



SCOTT & WILLIAMS, INC., 40 Worth Street, New York

ESTABLISHED 1865

KNITTING SECTION

36th Annual Knitting Show

KNITTING WEEK in Philadelphia, April 15-18, once more drew to the Quaker City representatives of the knitting and allied industries wherever dispersed over the continent. The occasion, of course, was the 36th annual Knitting Arts Exhibition, held under the auspices of the National Association of Hosiery Manufacturers and the Underwear Institute, and the annual conventions of these two organizations.

The Knitting Arts Exhibition, more popularly known as the Knitting Show, is the only event of its kind in the industry, offering on the floor of Commercial Museum in West Philadelphia, a comprehensive display of knitting machinery, and auxiliary equipment, services and materials. A digest of the newer products offered this year may be found in an appended report.

Generally, the Show this year was considered by those participating to be, as usual, a success. An innovation was introduced by the management in limiting the exhibition to four days, eliminating the half day on Friday that has prevailed previously, and the change appeared to meet with universal approval. It did not seem to curtail the attendance of interested mill men, nor to interfere with its distribution; Wednesday and Thursday being, as usual, the main days of millman attendance.

Although the number of individual exhibits at the show was an increase over last year, note was taken of the absence, this year, of exhibits of several of the main knitting machine manufacturers who have been "regulars" in the past. The absence of these from "knitting machine row" in the hall reduced the interest for many, but those participating appeared to be satisfied. The increase in the number of exhibits was supplied mainly by yarn and specialty exhibitors who seem to be increasing each year.

Comment of a number of exhibitors in favor of decreasing the frequency of the exhibition by making it a bi-ennial instead of an annual event seemed to have increased. Last year, similar comment produced formal recognition from the sponsors with an announcement that, as usual, the show would continue as an annual affair. Reservations have already been placed by many for space in the 37th annual exposition in April 1941, but decision on participation next year by some of the leading knitting machinery concerns had not been announced at this writing.

The annual conventions of the two major associations in the knitting field, which sponsor the Exhibition, naturally served as additional drawing cards for mill men from all over the country; the respective managements wisely planned and conducted the meeting programs with dispatch and a minimum of time, permitting full disposition of the organizations' business affairs, and authoritative treatments of timely subjects without unduly diverting the executives' time from the exhibition itself.

The Hosiery Convention

The National Association of Hosiery Manufacturers held its convention on Wednesday, April 17. The chief features were the report of the president, Earl Constantine; the report of the research committee, by E. N. Ditton, of Gotham Silk Hosiery Company; and the election of officers for the coming year.

In his report, Mr. Constantine reviewed briefly the activities of the association during the year and discussed the major developments in the industry with which the organization was con-

Photos of Knitting Arts Exhibition by John C. Fonville of "Cotton"

cerned. He reported the operation of the hosiery industry under the wage-and-hour law to be proceeding satisfactorily, pointing out that the hosiery industry was the first to secure lower wage minima applicable to learners. He discussed the raw silk market, pointing out that the hosiery industry "has become not only the largest user of this commodity in the United States, but likewise the largest in the world. During 1939 we took 76.4 per cent of the total raw silk exports of Japan, and this represented 92.6 per cent of the total mill takings of Japanese silk in the United States."

Mr. Constantine declared that the tremendous fluctuations in raw silk prices—rising from $1.75 in August 1938 to $4.38 in December 1939—are responsible for the present unfortunate price structure in silk hosiery.

Announcement that the annual Hosiery Industry Conference will be held in New York City on January 9 and 10, 1941, was made by the speaker.

Mr. Constantine took recognition of an increase in three-shift operations during the past year in the hosiery business, but declared that "the total of such operations is not yet so large but what there is time to hold it in check and reduce it." The feasibility and legality of co-operative action, he questioned. He cited, however, the

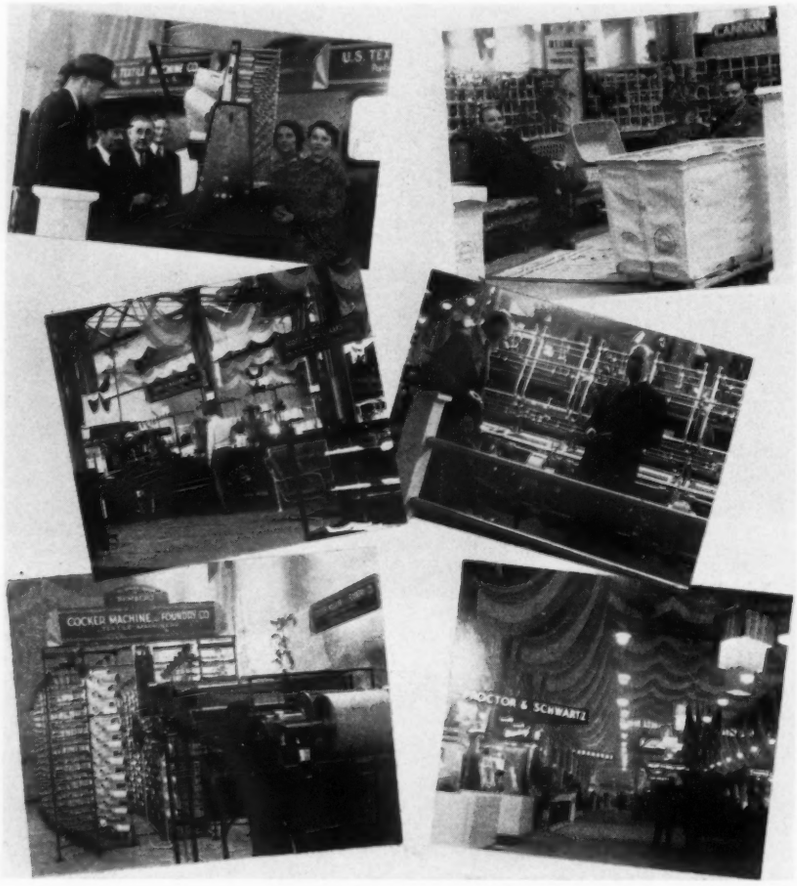
Mr. Constantine

Mr. Millis

facts that three-shift operation puts equipment under continuous use, with resultant maintenance difficulties, and that "the annual consumption of our product, including ladies' hosiery, has reached apparently another plateau at which demand is likely to remain for several years."

The forms for the new survey of knitting equipment of the hosiery industry, Mr. Constantine reported, have been completed, and the new survey will start promptly. He urged complete co-operation with this project by all manufacturers.

Mr. Ditton, reporting for the research committee, told of its achievements in the development of more accurate and reliable methods of testing finished hosiery; both from the standpoint of the mill and for consumer standards.



Of outstanding interest was the presentation to Austin H. Carr, who retired as chairman of the board of directors of the Association after three years service, of a scroll and silver plate, in appreciation of his services to the industry.

The nominating committee's recommendations of the election of the following persons to the board of directors for terms of three years was unanimously accepted: F. W. Boehmen, B. Z. B. Knitting Co., Rockford, Ill.; P. W. Eshelman, Wilkes Hosiery Mills Co., Wilkesboro, N. C.; J. J. Kronenberg, Wayne Knitting Mills, Fort Wayne, Ind.; F. Seifart, Hudson Silk Hosiery Co., Charlotte, N. C.; and R. P. Shapard, Jr., Spalding Knitting Mills, Griffin, Ga. Meeting Wednesday evening, the new board of directors elected the following officers for the coming year:

Chairman of the board: J. E. Millis, president, Adams-Millis Corp., High Point, N. C.; vice chairmen, John Bromley, of Quaker Hosiery Co., Philadelphia, and Irving K. Hessberg, Van Raalte Co., Inc., New York City; president, Earl Constantine; treasurer, Nathaniel Judson, Mock, Judson Voehringer & Co., New York City; and, secretary, Reuben C. Ball.

The Underwear Convention

At the meeting of the Underwear Institute, on Thursday, April 18, especial attention was given to the operation of the underwear industry under the Fair Labor Standards Act and particularly to the matter of learner exemptions. President Roy A. Cheney, in his official report, noted that his paramount activity had been in wage-and-hour matters, he having spent 63 days in conferences and hearings on the subject and having filed 16 briefs on wage-and-hour matters. He emphasized that the present minima for knit underwear and knitted fabrics (33½ cents), knit fabric gloves (35 cents) and men's and boys' woven underwear (32½ cents) are by no means permanent, declaring that "it is my hunch that we will be faced again this year with a new industry committee charged with the task of raising the present minimum wage rates. I mention this because it should always be in your minds in figuring your costs."

As to learners, Mr. Cheney said that, "Were it not such a sad thing, it would be highly amusing to me to hear of all the meetings, associations, committees, etc., for the aid of youth, and to read and listen to the speeches by government officials and public-spirited citizens pleading with business and industry to give youth a chance, when a division of the government—the wage-and-hour administration, which has the greatest control over employment, denies the right or the opportunity or employment to youth where experienced help is available. Not only denies it, but denies it in the face and in spite intent that youth should be given an of a law passed by Congress with the even break with the older person."

Colonel Philip D. Fleming, administrator of the wage-and-hour division of the Department of Labor, was a speaker at the association's luncheon. He told of the operation of the law,

and announced that a hearing on the learner situation in the knitted underwear industry would be held in Washington on May 2. Ralph M. Jones, of the association, outlined its fight on the learner matter, and reported the program on this subject which would prove acceptable to the Institute, and which would be submitted at the May 2 hearing. These provisions are:

"1. That learners be employed and paid at the standard piece work rate applicable to the particular operation or duty they are performing.

"2. That the learner be guaranteed a minimum wage amounting to 2/3 of the minimum wage otherwise provided, even though the learner actually earns less.

"3. That a learner be classified as such for a period of 480 working hours but that these hours must be worked within a maximum of 20 consecutive weeks. There shall be a limitation on the number of learners of a per cent of the employees in eash mill, provided, however, that mills having less than 100 employees shall be permitted to have at least 5 learners, and that special permission shall be granted to employ a greater number of learners upon good cause beyond such as a new mill organized in new territory, a new product, putting into production of extra machinery, etc.

"4. That learner be classified as such if he has not been employed in the same operation or duty within a year previous to the beginning of his existing employment."

Thomas J. Fitzgerald, chief statistician of the Bureau of the Census, spoke to the underwear men on the current census of manufacturers, and Miss Ruth O'Brien, chief of the textiles and clothing division of the Bureau of Home Economics, Department of Agriculture, Washington, discussed some phases of her work. John D. Strain, industrial relations counselor, discussed trends in employer-employee relationships.

Mr. Cheney

Mr. Judson

Mr. Hessberg

Mr. Ball

All officers of the Institute were re-elected for another year, including: Ralph M. Jones, vice-president of the Utica (N.Y.) Knitting Co., chairman; Grover C. Good, Globe Knitting Works, first vice-chairman; Walter W. Moyer, of Moyer Underwear Mill, second vice-chairman; and Oscar W. Gridley, Utica Knitting Co., treasurer. Roy A. Cheney was re-named as president.

Exhibits Depict Progress of Knitting Industry

IN ADDITION to the helpful personal contacts made at the Knitting Arts Exhibition, the visitor gains a wealth of information in the way of new improvements in machines, and in new products developed for the various departments of the knitting business—in this the 1940 knitting show was no exception. Several of the old-line machine companies did not maintain booths this year, but there was still plenty for both the newcomer and the experienced patron of the knitting exhibition to see. The following brief summary represents a report of new or improved equipment and supplies at the show.

Knitting Machines

Once again various types and gauges of the Komet machines were on display, bringing the visitor up-to-date on the major trends and developments in this type of knitting machine . . . the HH-PW was equipped with ample pattern scope, wrap yarn facilities and chain striping attachments to permit fullest latitude in horizontal yarn change colored striping. An HH machine was also running, as was a rib body machine. Eight machines of the Banner type were running, set up to knit typical patterns.

Several machines of the Jacquard type were running, making such fabrics as bathing suit material, sweaters and jersey cloth; one was equipped with signal light stop motion. In the full-fashioned field the auto-heeler having the automatic transferring, thread cutting device and pressing off was shown, and demonstration was made of the auto-welt machine. This same machine was operating with a full-fashioned carrier especially designed to operate on nylon yarn, while at another booth a carrier of the flexible type was on display, said to be used for the same purpose.

Much interest was displayed in the greatly-improved flat warp knitting machine, operating at high speed; this is said to be the only machine of its type available at this time, due to unsettled European conditions. Similar interest was shown in a high speed warper for preparing warps for the flat warp knitter and tricot machines; the new warper, shown for the first time, will handle fine yarn from a cone or spool. Another warper was on display that will handle any type of yarn at high speeds.

Winding and Throwing

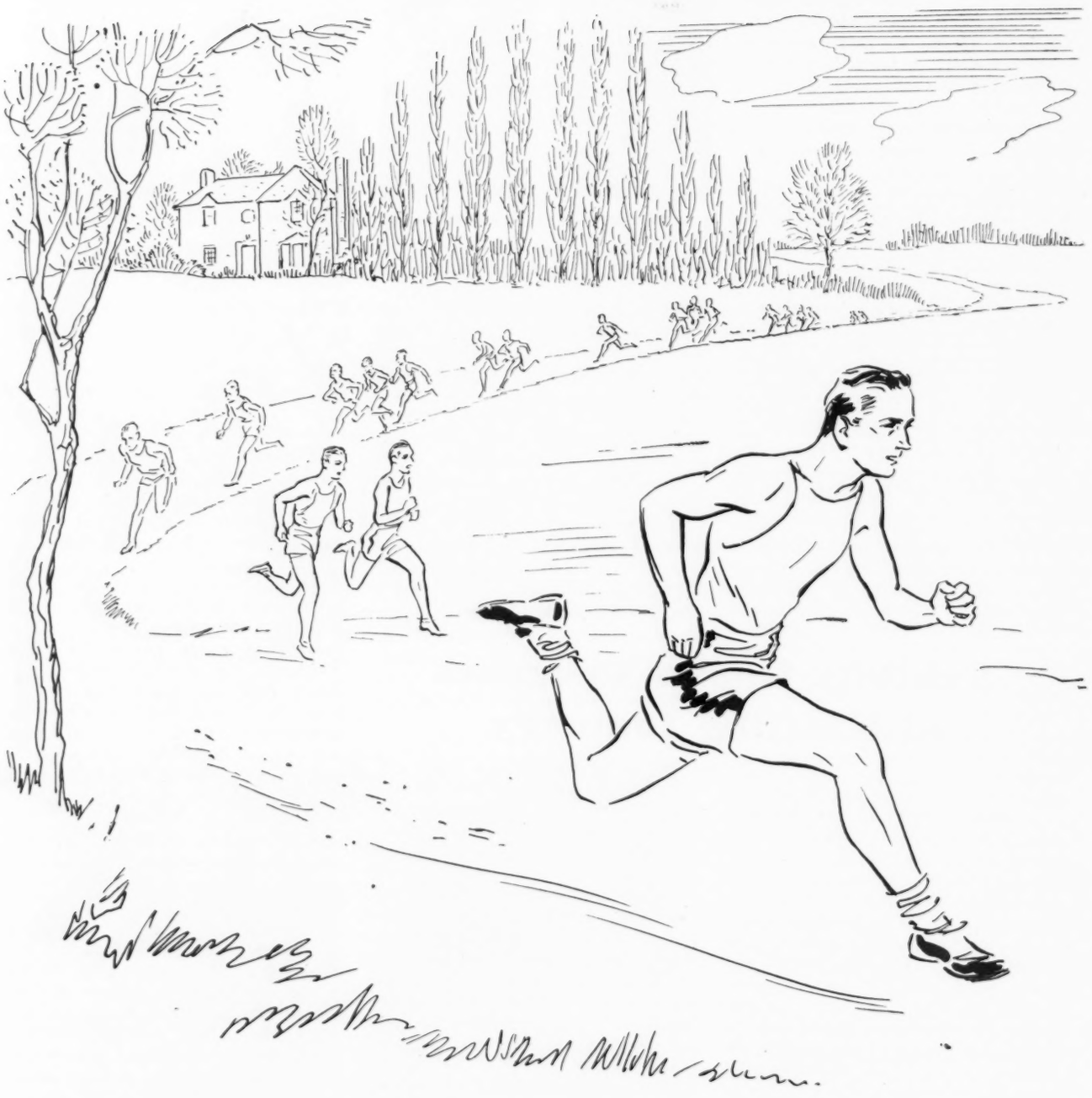
Many machines of interest to throwsters and mills re-winding yarn were in operation, though several of the exhibitors admitted that developments since last year were few. The new Duplex doubler-twister had overend delivery of yarn from the winder bobbin, and the Apex twister was operating on nylon. A novelty yarn twister was making slub and ratine yarns, with each spindle being so regulated as to make an entirely different pattern. Another high speed open face machine for rayon twisting of combination yarns was equipped with a compensator to equalize the tension at all times. The No. 50 winder for silk and fine denier rayon yarn or the newer synthetic yarns was set up and running with a new type of tension based on the spring diaphragm disc principle, entirely different from the finger type of tension. It was said that this new device permits the twist to "roll in" and does not disturb the twist—used only for dry winding; once the setting is made it will remain as set and the tension can be checked by tensometer. The new 5B machine had been radically improved from stem to stern and was running; in the same booth was shown the production of headless packages.

The No. 99 automatic bobbin winder was on display simply to indicate the progress made on it since the last show. This machine is primarily designed to wind filling from *large* supply packages, and provision has been made for the continuous operation of the supply package so that the supply will never run out; this is accomplished by tying the end of the new cone to the tail of the supply cone that is running out. The height of the machine's creel has been lowered so that the operative may work easily.

Dyeing Equipment

Several types of boarding equipment were shown, including the rotary, stationary and adjustable forms, and one company put on a movie to demonstrate the use of the new pre-boarding equipment for nylon hosiery. Several looping machines were also being operated.

A good assortment of dye-house equipment was seen at the show, most of which was fabricated from corrosion



—and the best man wins!

As the race for profit in full-fashioned knitting becomes more and more a race for technical superiority, the demand for "TMW" Needles shows a strong and steady increase.

TEXTILE MACHINE WORKS • READING, PA.

"Mixed with dry wood, even the wet will burn"
OLD PROVERB

In a 40-hour week the new READING high-production twenty-six section forty-five gauge full-fashioned knitting machine produces 97 per cent more volume and 116 per cent more value than the ordinary eighteen-section forty-two gauge machine.

TEXTILE MACHINE WORKS • READING, PA.

resistant metals. Interest was shown in the automatic package dyeing machines with controls to regulate the processing, rotary dye kettles for hosiery, skein dyeing machine, machine for dyeing and finishing striped fabrics, and the scouring and dyeing machine for handling vat and naphthol colors. Other equipment along this line to be seen were the micro-set laboratory padder and the single-package laboratory package dyeing machine. Unusual equipment for handling highly corrosive materials was made of graphite, which because of its factor of retaining heat will be of interest to many finishing mills and dyehouses.

Fluorescent Lamps

One of the features of the show consisted of fluorescent lamps and fixtures. Fluorescent lamps and units were shown that produce different colors of light, each designed for special purposes of inspection, office work, or general industrial lighting. Lamps of both the single tube and the double-tube type were on display, the latter having reached the advanced stage of eliminating the stroboscopic effect.

Makers of bobbins, spools, gears and other knitting supplies showed advancements in their wares since the last knitting show. Spools and bobbins were seen with heads of wood, fiber, laminated substance, or metal alloy, to best suit them to the purpose they must serve.

Companies having available supplies and equipment parts of corrosion resistant metal displayed them, showing their use in the dyehouse, finishing department and other places throughout the plant. One company showed a fading light unit for the rapid test of color or fastness of dyes, and to indicate the stability of colors.

Latest developments in hosiery identification, marking packaging, boxing, tying were on display, as were newest accessories for the application of dry transfers. Other methods were shown in the line of identification whereby the labels were sewed, adhered and fused to the fabric, and still further in this field was the invisible laundry marking device, which shows up only under a certain type of lamp.

Other items of interest were the automatic cone conditioner, the electric psychrometer, dyeing and finishing control instruments, hosiery mending machines operating at high speed, cabinet type yarn conditioner, fiber trucks and cans, flash light hosiery inspection devices, paper tubes and carriers for yarn, lubricants for specific and general purposes, and many of the newest types of yarns of natural fibers, synthetic, and elastic combined.

The research committee of the National Association of Hosiery Manufacturers showed photomicrographs of defects in hosiery, standards of hosiery defects. Attracting attention was a display in this booth showing the types of insects that eat and destroy hosiery in the mills. Testing equipment was also to be seen in this booth, such as for determining snag-proofness of stockings. Other testing equipment on display at the show was for package density, lubricity, setting of twist, abrader for evaluating wear, and the bursting strength tester.

Of general interest was a model of a fractional distillation column for making gasoline and oils, a special canbas basket designed so that there is no overlapping of canvas to snag hosiery (designed for use with nylon), and napper clothing and brush clothing for the knitting trade.

The exhibits of sewing machines, as usual, attracted much interest. New machines were shown for making buttonholes, for overedging, crocheting, shell stitching, seaming, saddlestitching, etc. Some of the newer machines have been equipped wtih continuous lubricating devices, and speeds have been increased over those of a year ago.

Finishes

Rapid strides have been made in the field of finishes. New products were exhibited that are to be used on the recently developed synthetic yarns, and resin finishes have been developed that are easy to apply and that give added beauty and protection to the fabric. Finishes for specific purposes were on display, said to be more permanent to laundering and snagging. Several products have been prepared to be used in moistening troughs with new synthetic yarns.

A machine said to be a great timesaver in inspection of hosiery was shown. With it the stockings are placed flat and evenly so that the inspector may quickly pull them on the expansion form, and an automatic device grasps the hose and places it into the dyebag, thereby giving the operator more time for the actual inspecting job. The machine is said to save two-sevenths of the inspectors time.

Many of the companies present have developed special equipment for handling nylon, vinyon, and the other newer synthetic fibers, and still other companies have machines and devices in the experimental stage for this purpose. Considerable interest was displayed in a machine to manufacture cuprammonium rayon, which was brought over from the World's Fair.

Many companies maintained booths without exhibits, but with comfortable furniture available and representatives present to greet their many friends in the trade.

VALUE
comes out in the
Finish
As the skill of the diamond cutter determines the value of the gem, so does the skill of the dyer and finisher determine the value of hosiery. ★ But expert finishers don't depend on skill alone; they pick their processing materials carefully. Many demand . . . .
Arko-Finishes
HOSIERY of any style benefits in finish, wearing quality and all-around consumer appeal when treated with
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Nylon Full-Fashioned Hosiery

By Caswell Clifton

IN HIS address at Philadelphia, Earl Constantine made the following sound comment concerning nylon:

"The much discussed new yarn of nylon is now with us commercially. About 50 manufacturers of full-fashioned hosiery have been licensed to make nylon stockings.

"The use of a new yarn, possessing characteristics of its own, naturally presents production problems which it will take time to solve. In the meanwhile, knitting, dyeing, and other departments in the mill must adjust themselves to the use of a new product and must find ways of overcoming the difficulties which arise. Each hosiery plant becomes a separate experimental plant. During the initial period of manufacture, it is expected that the element of waste will be high; the rate of production will be low, and the percentage of irregulars will be unusual. In addition, the new yarn requires one added operation, namely, preboarding. These factors put together are likely to result in unprofitable operations for the manufacturers initially."

The following article on the practical knitting of nylon into hosiery was prepared exclusively for "Cotton" by a qualified correspondent subsequent to the Knitting Arts Exhibition, and following interviews with a number of mill men who have had varying degrees of experience with the new yarn. It is not offered as a conclusive treatise on the subject, but rather as a "progress report" to date, and, as such, as an exclusive review of some of the problems encountered and how they are being solved.

As such, we feel it will be interesting to all hosiery manufacturers, and submit it as a starting point for further discussion, which will be welcomed from any qualified reader.—The Editors.

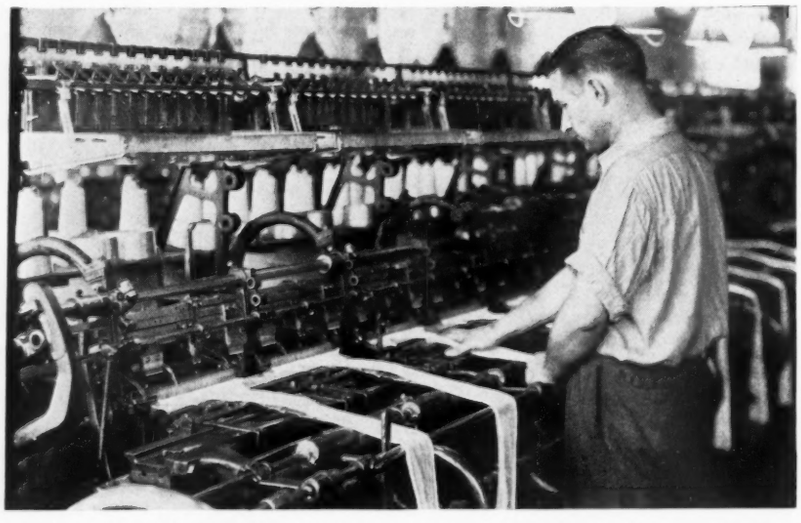
WHAT are some of the difficulties encountered by the mill in knitting full-fashioned hosiery of nylon? Is it more difficult to handle than silk? What machine changes, if any, must be made? What new processes and methods does it require? What effect does nylon have on the machine parts? How do production, cost, and seconds compare with these items when running silk? Can nylon be successfully run on new and old machines alike??

These and similar questions have arisen, naturally, with the advent of nylon as a material in the manufacture of ladies full-fashioned stockings. They have prompted an investigation among a number of the mills using this new yarn, and an attempt will be made here to report the practice of these mills thus far. We say "thus far" because, at this stage, there is much to be done in adapting this new yarn to knitting, and this story is offered to the readers of COTTON as a "progress report" of what has been encountered, and what has been done, thus far in its use; with the dual hope that it will present current practice and that it will stimulate further discussion on the subject.

Although the mills running nylon at this time are in different stages of progress with it, some facts seem to be pretty definitely established as far as the hosiery manufacturing process is concerned. All of the mill men discussing the subject agree that knitting machine production, so far, is lower on nylon than on silk; that manufacturing costs to date are higher. Nylon stockings seem to be more subject to pullers than are gum silk gray stockings, so that more care in handling must be exercised throughout the whole manufacturing process. Nylon reaches the mill in a sized condition, that is, it has been treated with a protective treatment that would correspond to the natural sericin gum in raw silk, and this must be somewhat softened, without entirely destroying this size.

Nylon, coming to the mill packaged and ready for the knitting machine, obviously will affect production in the silk throwing departments of mills equipped to do their own silk throwing, with a resultant curtailment in fine yarn throwing and drawing operations.

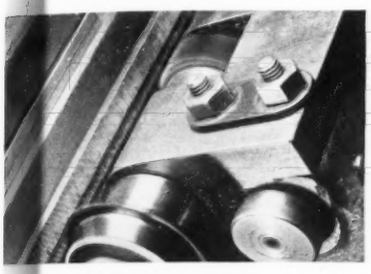
One trouble that has been eliminated with nylon was an original tendency of the new yarn to drag hard in coming off of the cones, causing press-offs, cutting, and poor fabric in the knitting machine. Some knitters declare the yarn dries out on the knitting machines, causing it to run wiry off of the cones. At least one mill has equipped machines with special tension devices to eliminate trouble caused by this wiry condition, and all through our study, emphasis was



Photographs made in Knitting Department of Wiscassett Mills Co., reproduced by courtesy of "Esso Oilways".

Nylon being run on a full-fashioned machine

LEVELING of the bar is assured to an accuracy of 2/1000ths of an inch with this special indicator gauge. This makes for easier setting in your machines.

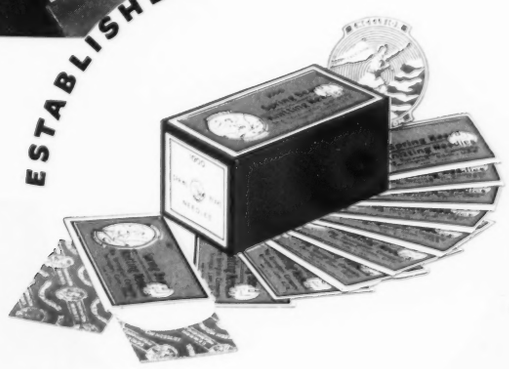


SLOTTING accuracy is controlled automatically on this specially built Torrington slotting machine by a micrometer depth gauge.

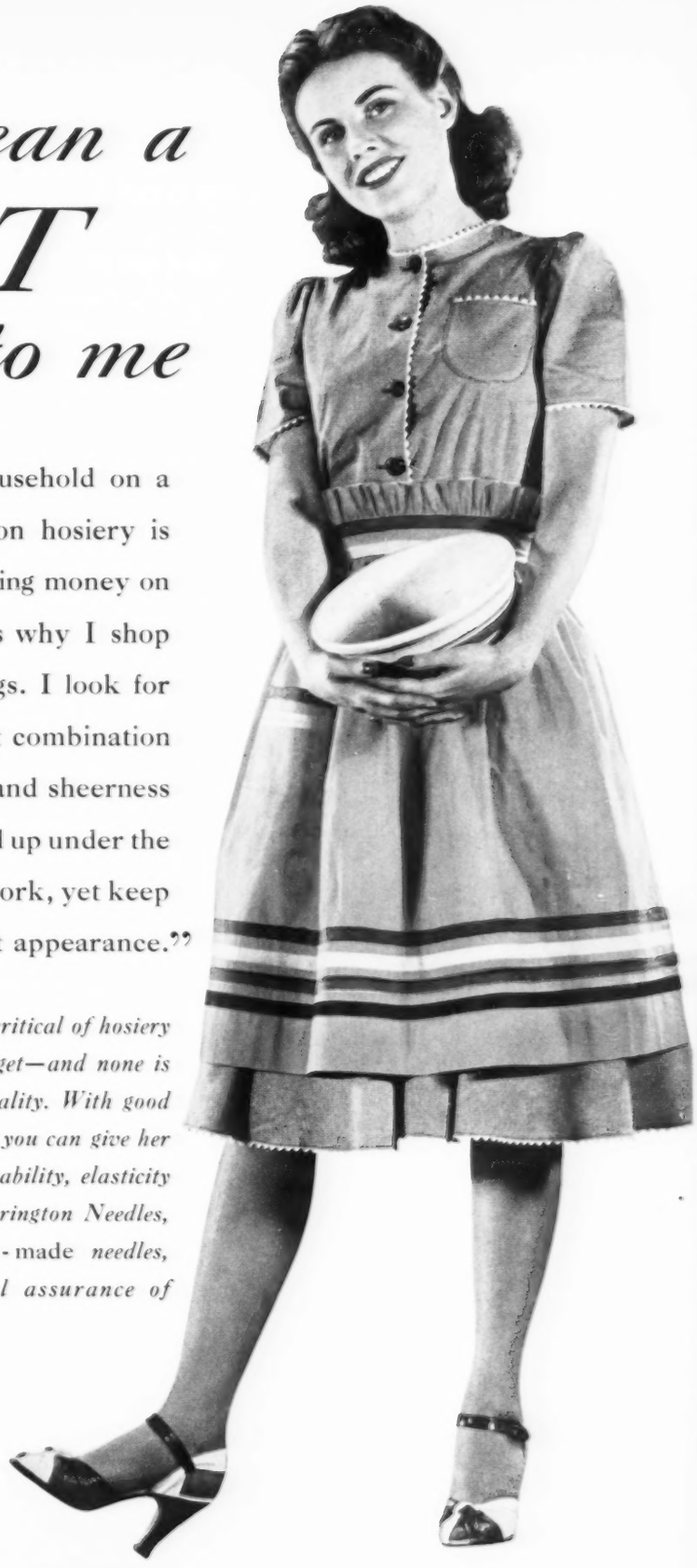
TORRINGTON *reneedles your bars with scientific precision*

STRAIGHTENING of needles is done by highly skilled straighteners—none with less than 10 years experience and most with 15 and 18. Needles are gauged three ways.

ESTABLISHED 1866



They mean a LOT . . . to me



"If you're running a household on a budget, saving money on hosiery is just as important as saving money on the grocery bill. That's why I shop so carefully for stockings. I look for stockings with the right combination of durability, elasticity and sheerness—the kind that will stand up under the wear and tear of housework, yet keep their snug fit and smart appearance."

No type of customer is more critical of hosiery than the housewife on a budget—and none is more appreciative of good quality. With good materials and good machines you can give her the right combination *of durability, elasticity and sheerness. And with Torrington Needles, the more uniform* machine-made *needles, you can give her the final assurance of uniform knitted quality.*

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Needles and Sinkers

Variety of Types

BUT NO VARIATION IN QUALITIES

Torrington offers you variety in needles—with no variation in the qualities that count in obtaining fine knitting results. Take, for example, temper. The steel used is special steel, specially heat-treated for Torrington. And Torrington machines are designed to produce needles with this steel in such a way as to protect the right balance of temper throughout the manufacturing process. Torrington assures all other desirable qualities—uniform finish, strength, dimensions—with the same thoroughgoing mechanical precision. Use Torringtons for complete variety—and complete uniformity.

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Looping nylon stockings . . .

placed upon the fact that there must be less tension placed on the yarn because of the relative "brittleness" of the yarn in its sized condition. Nylon is less hygroscopic than silk, and to remedy this, special penetrants are being used in the machine moistening troughs to help condition the yarn before it reaches the knitting needles. It was reported, as a sidelight on this point, that better results were secured with the yarn during damp weather.

Generally speaking, major difficulties in knitting nylon are being overcome, but mill reports vary as to actual knitting machine production. In one mill the machines on nylon are running 80 to 90 per cent of normal silk production, while it is known that in another mill machines are running only about 50 per cent normal production after having been on the new yarn for six weeks or more. It might also be interesting to note that mills with newer equipment are reporting more satisfactory results in comparison to mills using older equipment. It is also claimed that better results are noted on high-speed machines when the machines are slowed up.

Some difficulty is reported in reconing the fiber for knitting purposes, since the yarn has a tendency to stretch instead of break; but the development of equipment giving sufficient compensation to take care of the added stretching qualities of the new yarn should relieve undue problems in this respect.

In preparing knitting machines to run nylon, mills reporting the best results have carried out the following procedure:

Polishing of all sinkers, knock-over bits, needles, etc. Where this is not done, cutting of fabric, press-offs, etc., will result to a marked degree. Tension rings, wires, snappers and carriers should also be cleaned free of all gum residue to guarantee free passage of the yarn from the cones to the needles. Machines are also being equipped with all new main carrier tubes to insure against press-offs and poor selvages. Not much information can be reported about cam changes for each mill man questioned seems to have his own particular ideas as to motion changes necessary to get good fabric with the new yarn. Bad needles, however, must be replaced, as it is admitted that needle lines show more glaringly on nylon than on gum silk stockings.

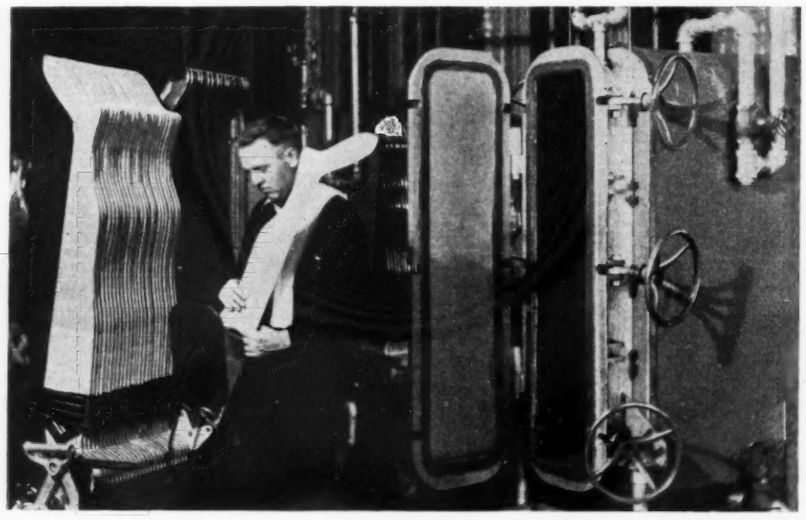
One difficulty experienced with the new yarn was caused by the sizing substance stripping off on the knitting needles and causing cut fabric, especially on the legging machines. To overcome this, some mills have found it necessary to run out a piece of cotton every morning before starting to knit the nylon stockings. Running this piece of cotton polishes the needles and frees them of the so-called sizing deposits. This day-by-day procedure is said to eliminate most of the cutting trouble.

Due to shrinkage in the finishing operations, nylon stockings must be knitted more loosely than gum silk on the knitting machines. Additional courses must also be added to the stocking length to make up for this shrinkage. Knitters are adding from 50 courses per foot size to 200 courses additional in the leg length. A stocking to finish 48 courses to the inch must be knitted four to six courses per inch looser on the knitting machine. But it is also pointed out that leg lengths run more consistently uniform on the new yarn than on gum silk.

Nylon on the footing machine has, as a whole, not been so troublesome as on the legging operation, but there is considerable trouble with the topping and creasing. First, it was found that the old-style creasing bone would not crease a line on the slippery nylon fabric. This trouble has been eliminated by the development of an electrically heated creaser which makes a very clear creasing line that does not go back into shape as was the case with gum silk stockings. Heels must be knitted a quarter of an inch oversize, or longer, and this in itself presents a major difficulty at topping. For example, a heel measuring 2⅝ inches in length must be topped on points measuring only 2⅜ inches, so it can readily be seen that this condition would tend to make bar topping an irksome proposition. It is also pointed out that probably less trouble is encountered on the footing machine due to the fact that these machines run comparatively slower than leggers.

Some points that mill men generally agree upon are: the amount of press-offs in knitting nylon is somewhat higher than in knitting gum silk. Once the machine is properly adjusted, nylon fabric is clearer than gum silk fabric. The percentage of seconds is about the same as on gum silk. There are less knots and yarn imperfections than in silk. Nylon is more ring-free than gum silk. Picots board out about the same as on gum silk. Sinker and needle lines show more plainly than on gum silk.

The seaming and looping operations have presented quite a problem in all mills on nylon. Production losses on seaming are reported



Pre-boarding nylon (before dyeing) . . .

to be anywhere from 35 to 50 per cent and in some mills this loss has been greater due to selvage troubles on the knitting machine. While the production loss has not been as marked as on seaming, looping has also been faced with difficulties. One of the biggest looping problems was caused by the flimsiness of the heel and toe tabs which had a tendency to ravel out. This has been corrected to some degree by running an additional cotton yarn in the tabs after the loose course on the knitting machines. It is generally conceded, however, that looping and seaming production will show a marked improvement as mill management continues to eliminate the difficulties and problems that have arisen; also as operators grow accustomed to handling the new type of fabric.

One fact has been quite definitely established in regard to nylon stockings, and that is, that more care must be exercised in handling nylon stockings in the mill than was necessary on silk stockings. Foremen, knitters, toppers and pairers all agree that nylon is susceptible to pullers to a marked degree. If this is the case, and nylon does pull and snag more readily than silk, in process, there will be plenty of handling difficulties for manufacturers to overcome.

On the other hand, although some of those who have worn and handled nylon stockings claim that they pull and snag more readily than do silk stockings, these same wearers also maintain that the snags and pulls do not break open as quickly. This is no doubt due to the fact that the nylon is so much stronger and more elastic than silk. It is also agreed that runs and breaks caused by excessive stretching of stockings at the knee—a common fault with silk stockings—are considerably reduced with nylon.

Pre-boarding of nylon stockings before they go to the dyehouse is a new and highly important process in the making of nylon hosiery. In the pre-boarding process, the stockings must be boarded to the correct length and properly put on the forms, with special attention being paid to the temperature—pre-boarding is done at higher temeratures—and to the welts and picots. For, once the pre-boarded nylon stockings undergo the treatment of steam pressure to which they are subjected, the whole stocking (shape and stitch) becomes set and changes very little, if any, after the dyeing operations. Although some care must be exercised in the dyeing operations to retain this pre-boarded shape, it is noted that the steam pressure treatment eliminates all wrinkles and marks from the stockings and they finish exceptionally clear.

Gives Wrong Answer

A woman employee in a mid-western mill was told by her doctor that if she did not have a major operation performed very soon her life would be in grave danger. As she didn't have available funds for such an emergency she asked the foreman if it was possible for her to get a loan from the company. She said that both she and a sister, who also worked for the company, would assign a certain amount from their wages each week to repay the loan.

"I'm sorry," the foreman told her, "but the company can't go into the banking business. It's against company policy to make loans to employees."

In turning her down in this manner, the foreman thought he was doing a good job by helping to keep the payroll department free of the nuisance of making payroll deductions. He did not know whether the company would have made such a loan or not, but he did not take the trouble to find out.

The woman's sister, who worked in another department, was indignant when she learned what the foreman had said. So she went to her own foreman. He went to the superintendent who said that the matter could be arranged, and it was. Of course, there has been considerable talk among the employees as the sick woman's sister took no pains to keep the matter to herself. Because the foreman did not take the trouble to determine what the company would do, he lost an opportunity to win additional prestige by doing something for the woman who was in trouble.

—"Management Information", Elliott Service Co., Inc.

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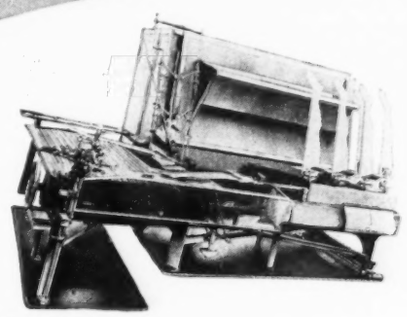
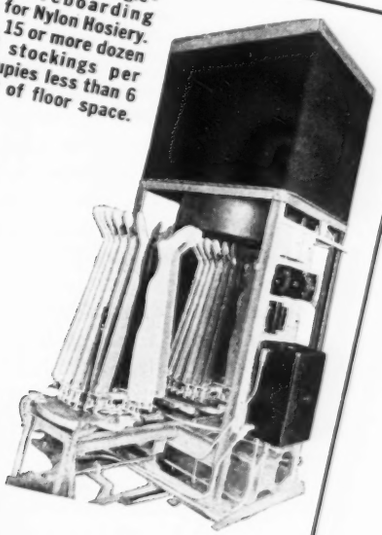
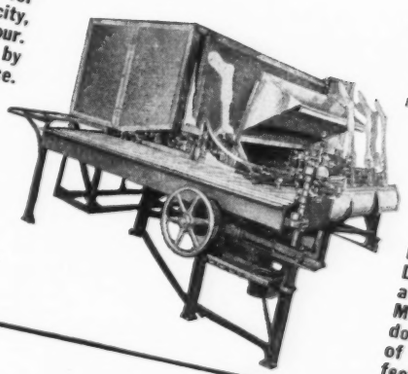
- UNVARYING MAINTENANCE OF QUALITY
- MAXIMUM COMFORT FOR THE OPERATORS
- HIGHEST POSSIBLE PRODUCTION
- VERY LOWEST OPERATING COSTS



Proctor Automatic Boarding, Drying, Stripping, Piling and Counting Machine for Women's Hosiery. Capacity, 32 dozen pairs per hour. Requires only 9½ feet by 11½ feet of floor space.



Proctor Automatic Single-Operator Preboarding Machine for Nylon Hosiery. Capacity, 15 or more dozen pairs of stockings per hour. Occupies less than 6 by 10 feet of floor space.



Proctor Automatic Boarding, Drying, Stripping, Piling and Counting Machine for Men's Half Hose. Capacity, 52 dozen pairs per hour. The size of the Machine is only 10½ feet wide by 9½ feet deep.

PROCTOR & SCHWARTZ AUTOMATIC MACHINES *for* HOSIERY

KNITTING KINKS

The "Specialist" Machine Fixer

EDITOR COTTON:

A certain lady, aboard a steamship, possessing an unusual amount of curiosity approached a gentleman in uniform and said:

"I beg pawdon, but may I awsk what the insignia on your sleeve represents?"

"Certainly, madam," he said smiling, "I am a naval doctor."

"My, how you doctors do specialize!" she replied.

Well, this is the age of specialists, and they are just as necessary in a hosiery mill as they are in the medical profession. The particular part to which I refer now is that of fixing machines. I have seen a lot of fellows who have been on the job for several years and yet who haven't the slightest bit of mechanical knowledge. They can keep a section of machines running until something gets wrong inside of the machine and then they throw up their hands. The same thing is true in the medical profession. A lot of doctors are O. K., just so long as the patient has a cold or even pneumonia, but if something gets wrong inside, so to speak, they have to call in a surgeon. Now this is no disgrace, either in the case of the medical doctor or the machine fixer; it is simply a plain case of each man doing the thing for which he is qualified. In nearly every mill there are a few fixers who can do anything to a machine that needs to be done, but they are in the minority in most mills.

I think that within the near future the whole system of machine fixing is going to be changed. Instead of each fixer having 50 machines, or whatever the customary number is, he will be given more machines and will be required to do only minor jobs, and the real fixing will be done by men who specialize in overhauling, this being similar to the patient who has to have an operation; he is taken to the hospital where they have men trained to do that kind of work and who have the proper facilities with which to do it.

Let me illustrate further what I mean: Suppose a man on a section of machines comes in to work in the morning and finds that one of his machines has a broken cylinder wall or needs new bearings or new gears. That fixer needs to oil his machines and size them up, and by the time he gets that done his knitter has a lot of machines "flagged" and he either has to neglect one job or the other. Let us suppose that as soon as he gets there he starts to overhaul his broken-down machine. It will probably take him two or three hours, and his machines have been running all this time without being sized and possibly they have made a lot of short and long stockings. Then he rushes to size up and his hands are so greasy, with grease that will not wash off, that he ruins a lot of stockings while pulling them on the board.

Of course, in small mills, it is necessary to have a man who can do all kinds of jobs on his machines, and one having the ingenuity of the old country doctor who used to operate on the kitchen table, with an oil lamp for light; but, in the larger mills, I think there is a wonderful chance to save a lot of money by having men who specialize in overhauling and let the section man take care of the small jobs and the sizing. Under the present system it takes many months, and even years, to train a fixer to take care of a line of machines, but if a machine "hospital" is maintained, a fixer could be trained in a short time to keep up a line of machines.

Let us consider the automobile assembly line. Very few men on that line could assemble a car, but with each man specializing in one operation it is a simple job and requires very little skill. The same number of men, each assembling a whole car, could not turn off one-half the work and it would take several times as long to train them.

There are very few fixers who have all the tools necessary to do an overhauling job on a machine, and it would cost the fixer a lot of money to buy them; in most cases there it a lot of time lost in his going around borrowing tools.

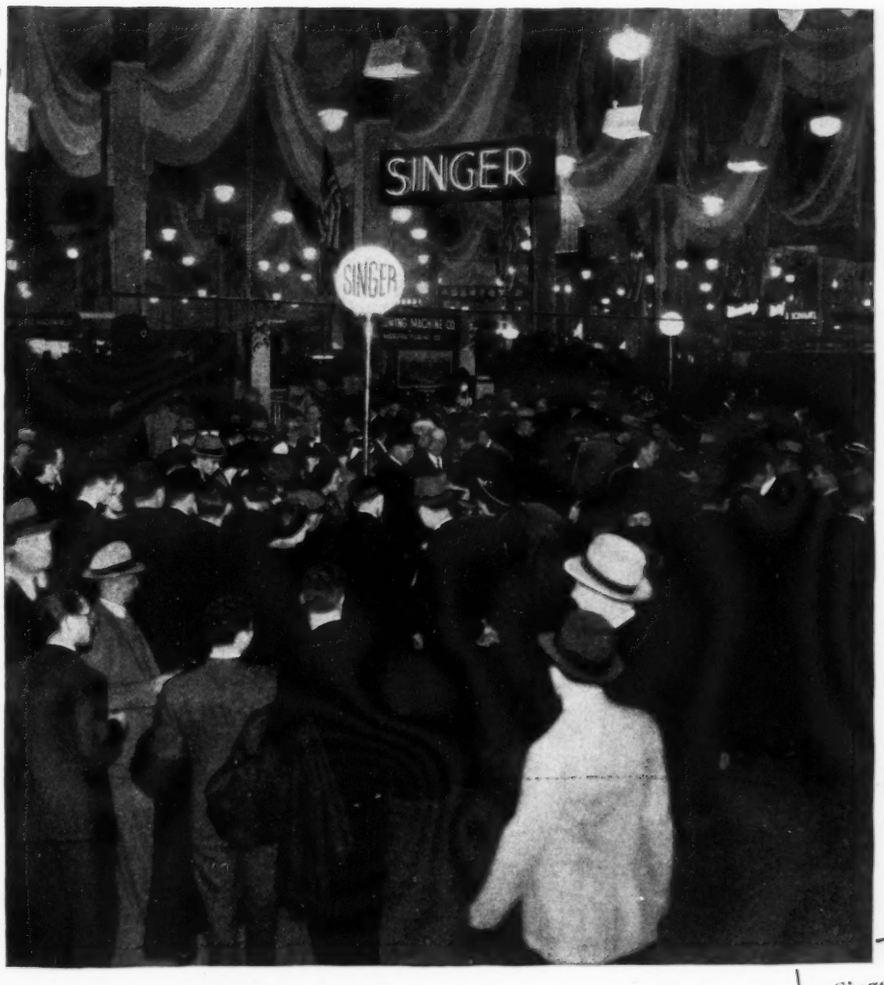
My idea of the correct way to do the job is to give each fixer more machines on the section and let him do only the minor jobs. Arrange to have a small room somewhere convenient to the knitting room for a machine "hospital" and have it equipped with all the necessary tools with which to do any kind of a job on the machines, and when a man on a section has a job that is going to take two or three hours, let him call the "surgeon" and he can forget about it until they bring it back in the line in good running condition. The machine "surgeon" has all the tools at his command necessary to do the complete job, and he is trained to specialize in this kind of work; therefore, he can do a better job, and in about half the time. It will not be necessary to add any men to the fixing staff; simply pick out one or two of the best trained men and divide out their machines with the remainder of the fixers, and it is possible that when you get this system to working you will be able to get along with even less men, and certainly it will be an improvement on your fixing set-up.

Most mill men know that there is a shortage of good trained fixers. Practically any kind of a fixer could get along with a section under this arrangement; or, it would be possible to take a good knitter and put him on a section with just a few weeks' training. If any mill man doubts my statements about good trained fixers let him give each of his fixers a set of main bearings or gears to install and see how much

THOUSANDS AGREE...

"It's worth waiting for"

REVOLUTIONARY NEW SINGER 242-1 HOSIERY SEAMER



THIS photo, taken at the Knitting Arts Exhibition in Philadelphia, shows part of the huge crowd which saw the new Singer 242-1 in operation. Ask your friends who attended the show what they think of this new machine. They'll tell you "Don't buy any hosiery seamer until you can get the Singer 242-1. It's really a great machine."

FEATURES OF THE SINGER 242-1

UNCURLING GUIDE—an exclusive feature uncurls selvages with unfailing regularity.

AUTOMATIC LUBRICATION—for all main bearings—saves operator's time.

SIMPLIFIED MOTIONS—fewer moving parts than any other hosiery seamer.

DISTINCTIVE DESIGN—extremely narrow head and convenient location of feedcups—allows rapid handling of work.

HIGHEST SPEED—production limited only by operator's ability to handle the work.

Mail the coupon so that you will be sure to receive full information about the SINGER 242-1.

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Send me full information about the Singer 242-1 hosiery seamer as soon as it is ready.

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difference there is in the time it takes each man to do the job; he might even find out that some of his men would not get the job done at all.

As stated in the beginning, this is the day of specialists, and the man who specializes will be the man who stays in the game the longest. This article is in no way a reflection on the fixers. I know of men who are experts in making new styles, or who can make any kind of an attachment for a machine, but who could not keep up a line of machines to save their lives, and the only problem is to find the men best qualified for each job and put him on it.

Charles Schwab said that he had a lot of men who knew more about steel than he did. Was that a reflection on Mr. Schwab? Not at all; he was doing the thing for which he was best fitted and getting others to do a good job making steel.

I think this fixing problem is one worthy of consideration, and I should like to have some of your readers' comments on it.

CONTRIBUTOR No. 7074

Even Stitch on Banner Machine

EDITOR COTTON:

This is in answer to "CONTRIBUTOR No. 7055", who on page 166 of the April 1940 issue of COTTON asked the following question: "When running Banner machines, what is the best way to even the heel and toe stitch?"

First, let's have an analysis of causes and the check-up necessary for uneven stitches on Banner machines. Examine the cam ring casting, which is attached to the upright post with two large flat-head screws and dowel pins, to determine that this ring is solidly fastened to its post. When this ring is loose even slightly, it will cause a wavy stitch in the reciprocating motion of the heel and toe.

Next, eliminate all vertical wear or play in the cam block except that which is required for a free sliding movement for machines on hand transfer work. This can be done very easily by turning down the buttons which fit in the slots of the cam block or by tightening the brackets on the side of the later models. This may also be done by a careful job of filing the buttons.

If the block is worn very badly it should be milled down to a new surface.

Now we are ready to use the stitch cam gauge under the cams and adjust both front and rear cams to this gauge, which is .875-inch in thickness; that is, the points of each stitch cam are .875-inch above the bottom surface of the stitch cam block. Care must be used in this operation so as not to force the cam block upward when tightening the screws which hold the cams. Adjust the landing cams on both front and rear so that needles will just pass freely. The double sole slackening device must be working so that the slidable cam will come back to this clearance when on the heel and toe.

So much for cams and rings—now to the sinker level. Adjust the outside sinker cams to a position that brings the throats of the sinkers, when at their maximum inward travel, exactly flush with the back of the needles. This is very important when using sinkers that have a slight angle on top; most are made in this way.

The circumference adjustment of the sinker cap should be made so that the sinkers are just being released from the point on their cam when the needle is at its lowest position under the stitch cam. It is highly desirable to have each sinker bunter screw give the same adjustment on both forward and reverse motion. See that there is no undue amount of wear in either the sinker cap or the outside sinker ring. This wear may be taken care of by a new sinker cap or by having the old cap turned out and a ring inserted and turned to fit the outside sinker ring.

With the foregoing carefully attended to a perfectly even stitch on both the forward and the reverse cams will result and a gore free, clean and with no cut stitches will be made.

CONTRIBUTOR No. 7071

Sizing Full-Fashioned

EDITOR COTTON:

Replying to "CONTRIBUTOR No. 6592", whose inquiry relative to sizing full-fashioned hose was on page 121 of the September 1939 issue, I am of the opinion that the best method of sizing full-fashioned hosiery is to use both a scale and a stitch glass. The number of courses per inch in the finished stocking should be determined and then the leg should be knit to give approximately this number of courses right after the welt. Of course, the ensuing part of the stocking must have stitch and weight regulation to keep the stitches per inch approximately the same.

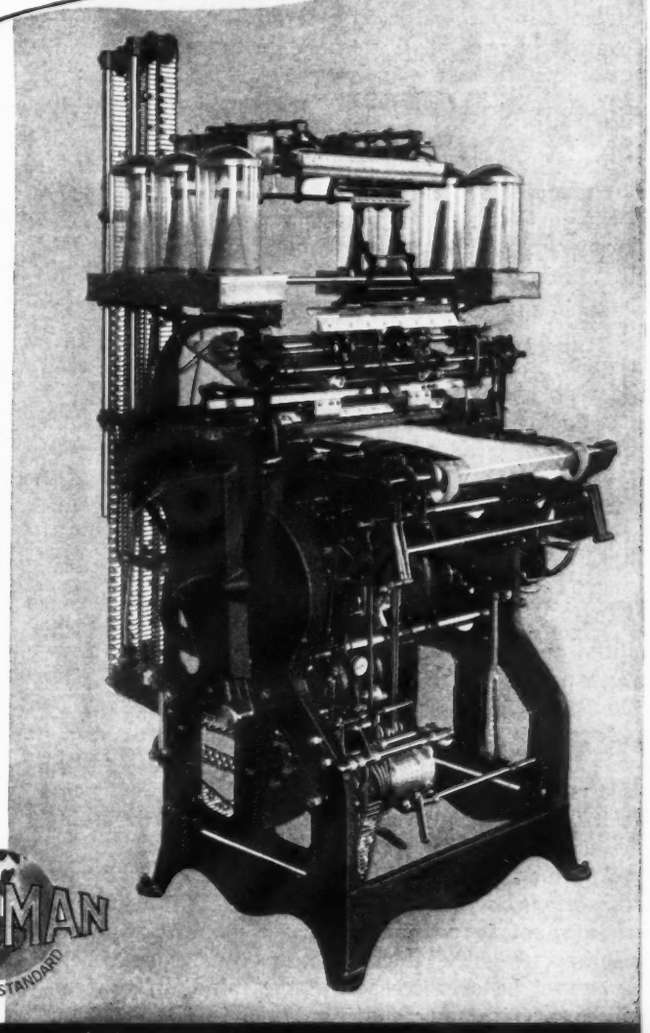
When once the length and the amount of courses in the leg are determined, and the same soaking solution and atmospheric conditions are maintained, there will be very little difference in the lengths of the legs. Should there be a variation, it will be due to the soaking or humidity. These two factors should be checked frequently. If there is a change in the humidity and the legs are either long or short, no changes should be made on the machine, because they will finish approximately correct.

In keeping the mismatching at a minimum, it is imperative for a close check to be maintained between the leggers and footers. There may be a possibility of the foot being knit tighter or looser than the instep portion of the leg. This will be due mainly to the material that is used for either the plating or splicing. If the courses count the same with a pick glass, there will be very little difference.

After the proper adjustments are made, I feel that the best method for keeping a constant check is, not only to use a pick glass, but to take several stockings from various leggers and footers, boil them off, and check from this angle. This has proven very satisfactory in keeping mismatching at a minimum.

CONTRIBUTOR No. 6998

How can we produce a stocking with **ABSOLUTE UNIFORMITY** *in color and texture?*



Every progressive manufacturer is pondering this vital question as he faces an increasing number of rejects and seconds caused by the bad matching of leggers and footers.

This machine is the answer—as many mills have discovered to their distinct profit. It knits the entire stocking in ONE OPERATION, perfect from top to toe. Let us send you complete details.

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Norristown, Pa.

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WILDMAN SINGLE-HEAD, SINGLE UNIT FULL-FASHIONED HOSIERY MACHINE

Belts—Knitting

EDITOR COTTON:

For the past few years it has been my privilege and pleasure to read every issue of COTTON, and I have found it very interesting and exceedingly helpful. Being employed in the seamless hosiery industry, naturally I am more interested in your Knitting Section, but I can honestly say that by reading the magazine from cover to cover I find some little helpful suggestions on almost every page.

I have been in the industry for 15 years, working as a fixer on circular hosiery machines in several mills in both the South and the North and have visited many more. We all know that knitting machines invariably wear out and must have parts replaced or repaired. Likewise mill men need new ideas and methods from time to time for the successful progress of their business. So, if it be the very good fortune of any particular man to have permanent employment in one locality where he is unable to contact other mill men, he may get his new ideas of what other men in like circumstances are doing through textile publications.

From time to time I have noticed short articles in your magazine in the form of questions and answers on the various kinds of belting used on circular knitting machines and the proper method of running such belts. May I add my bit to this little controversy?

To begin with, select a good grade of belting, and I'm not referring to any particular brand, for, as we in the manufacture of hosiery make several different grades of hose, no doubt the makers of belts do the same. Then use a good belt hook that won't be wearing out or breaking every few weeks thus tearing the belt. Personally, I have found that wire clips with a rawhide pin prove most satisfactory.

We all know that a straight running belt will outlast a twisted belt, but we also know that by using the belt twisted gives us more belt surface on the pulleys and consequently more driving power. However, arranging the lines of machines to make possible all straight running belts would mean taking up too much floor space and increased cost of shafting, pulleys, etc. The little saving in the life of the belts would be greatly overshadowed by other costs. So, it is necessary to run straight belts on one side of the shaft and twisted ones on the other.

Apply and run the belts according to the maker's instructions for, after all, if he hadn't tested out his own product for various purposes used he wouldn't be in business. The importance of proper care of belting cannot be overstressed in the minds of the employees. If just any one is allowed to fit new belts and repair old ones a great waste will be the result. The fixers should be held responsible for the belts on their particular machines and they should be encouraged to learn the best methods of handling them. Most belting now available to the industry is stamped with the necessary instructions for applying and running. The markings usually read "Run This Way→" and "Apply This Side to Pulley". These

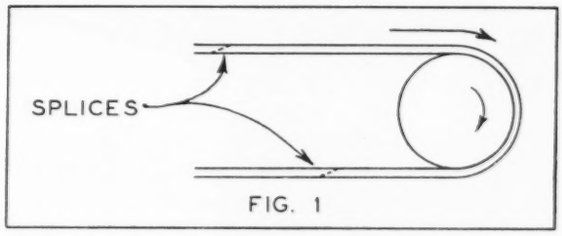

FIG. 1

signs always means apply the smooth side of the belt to the pulley and run in the specified direction, so the splicing laps will run with the drive pulley and not curl up and weaken the belt. (See Fig. 1.)

In my experiences I have found that most belt trouble comes, not from the kind of belt used or how it is run, but from the way the knitting machine is lined up with the drive shaft. A very low percentage of circular knitting machines in operation today are lined with the drive pulley. I have seen many a nice straight line of machines with every last belt on the line pulling sideways. The machines had been lined up by one of many methods with no thought as to belts or pulleys. These methods usually employ a cord run from one end of the line to the other and the machines sit even with cord in respect to the legs of the machine, the base, the bed plate, the latch ring, or the spindle. Some sets of machines are even lined up by a certain strip of flooring. All of these methods are good and well if the machine is set at the proper angle so that the face of the pulleys on the machine is parallel with the face of the drive shaft pulley. This permits the belt to run perfectly straight and the strain is equal the entire width of the belt.

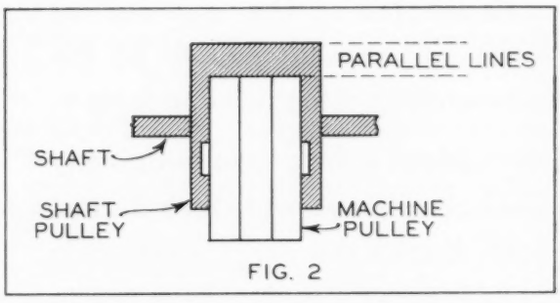

FIG. 2

Also, select belting narrow enough for it to run through the belt shifter and guide without rubbing either side. Use drive shaft pulleys wider than the total width of machine pulleys and do not permit the belt to run on the very edge of the shaft pulley in either the running or idling position. All these little angles, if permitted, will tend to fray the edges of the belt, weaken the splice, wear the belt unevenly and thereby lower the efficiency of the belt. Some mills make it a rule to throw the belts off at the end of the day's or week's work, but I do not consider this good practice for the drive shaft is usually oily and coated with lint, and the leather belt will naturally absorb some of the oil. Too, the sudden stretch in applying the belt again is very hard on it.

Fig. 2 is my idea of proper alignment of pulleys for longer life belts. (The shaft and drive pulley are shaded.)

CONTRIBUTOR NO. 7069

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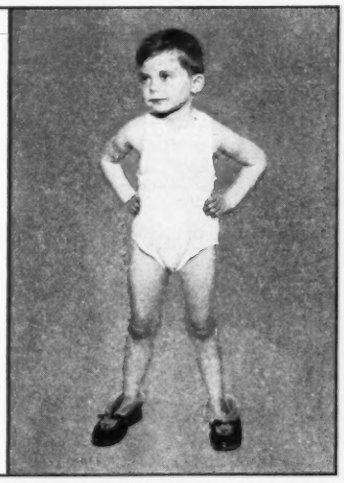

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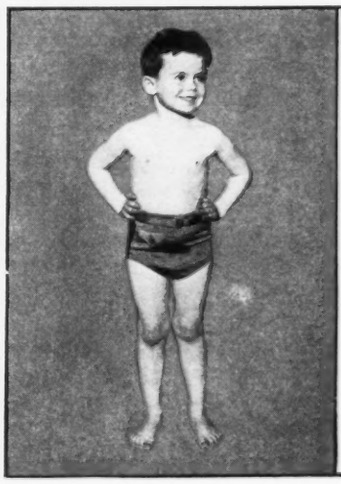

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TRENDS AND HIGHLIGHTS OF THE KNIT GOODS MARKETS

Weakness In Silk and Introduction of Nylon Stockings Cause Dullness in Silk Hosiery Primary Market— Seamless Hosiery Demand Relatively Good With Terry Cloth Constructions Active— Underwear Plants Fairly Busy on Old Orders—New Wage Minimum Shortly Effective

Philadelphia, April 16, 1940

WIDE FLUCTUATIONS in silk over the last month amounting to as much as 50 cents at one time, coming at the same time the market is awaiting the retail offering nationally of the new nylon stockings have brought about great uncertainty in the full-fashioned end of the hosiery market. Manufacturers recently announced lower prices for full-fashioned but the drop in silk to around $2.50 at one time has brought no new lists from the branded mills who claim that hosiery is already lower than the new silk level warrants. Seamless hosiery continues in fair to good demand and doing relatively better than full-fashioned. In the underwear section mills are doing fairly well on old orders but they have been booking little new until recently when demand began to pick up. The higher wage minimum for underwear mills effective May 6 is hardening quotations.

Full-Fashioned

Late in March sharp downward revisions were made in full-fashioned hosiery prices due to the decline in silk and the need for more confidence in prices among large buyers. At that time several branded firms reduced their prices bringing lisle tops down to $5.40 per dozen and all silk to $6.00. Kayser at the time stated that these prices would be guaranteed until June 30. A short time later silk took another dive and hit $2.50 but no new cuts were announced in hosiery prices as it was maintained by sellers that the new full-fashioned prices were based even on $2.00 silk or much lower than the market hit. Hosiery prices are about what they were a year ago whereas silk is considerably higher than at that time. The new prices are expected to result in much more activity but they immediately had little effect. It is admitted generally in hosiery centers that the coming introduction at retail May 15 of nylon full-fashioned stockings is a development resulting in much postponement of silk hosiery business this season and yet all admit that the volume of such hosiery available initially to consumers will be small. One development that is disturbing to mercerizers and to a smaller degree to rayon manufacturers who have been doing well with full-fashioned plants recently, is that as silk and hosiery prices go down there will be less of these two so-called substitute fibers used in the welts of full-fashioned hosiery. Already hosiery jobbers say that lisle tops and to a smaller degree the rayon welts are in smaller demand than they had been previously as the all-silk hose lists drop.

Seamless

Seamless hosiery has held up much better than full-fashioned during the dull period of recent weeks and some lines of goods such as anklets show nice increases over the previous year during the same time. A feature of the anklet and half-hose market has been the expanding popularity of the new terry cloth constructions which are selling well in both lines especially in the volume price range of 10 cents to 25 cents per pair. Silk seamless for women has been dull because retailers and other large buyers are delaying new commitments until the silk market hits bottom or else stages an advance. The lower silk price now will make it more difficult to hold the volume in rayon that came about when silk jumped to over $4.00. Silk seamless now can be made to fit the lower and former retail brackets. Total shipments of seamless hosiery in recent weeks has been larger than during the same period a year previous but many jobbers say this branch of the business would have been much larger had not general business been so quiet. There is a lack of confidence on the part of large retail outlets in prices and they are buying cautiously saying that consumer demand this spring has not been nearly as good as was expected early this year.

Half-Hose

Production of men's half-hose has been larger this year than during the same period a year ago, according to estimates made in the trade and based on data released by the National Association of Hosiery Manufacturers for the first two months of this year. In February, for example, production of regular length half-hose and slacks was 3,294,000 dozen pairs compared with a little over 3,000,000 a year previous with demand for slacks expanding as has been true in the last couple of years. These short socks are making a greater hit with consumers each year and with the elastic tops need no garters. There are new terry cloth slacks to intrigue the public as well as new knit in panel effects that are selling well in an otherwise dull general market. In addition the recent hardening of prices in wools is causing mills making wool half-hose for next winter wear to come into the market for worsted and merino yarns showing that the cold winter and the cleanup of stocks is placing them in a position to go ahead on 1940 lines with indications the season in these will be good.

Underwear

After a period of dullness for new business but with mills operating fairly well on old business, signs point to a more active underwear picture. This is due to war developments making buyers more confident and also because May 6 a higher wage minimum goes into effect for the knit underwear industry. Another important factor has been that after months of decline and dullness new business in cotton yarns has spurted conservatively and some are now asking more money for single carded and combed yarns. There has been comparatively little fall business placed because of the general business uncertainty but indications are there will be more interest now shown on all sides but no excited buying is expected such as was seen during the months of September and October of last year. Notwithstanding the recent dullness some mills report having done more this year to date than during the same period in 1939.

Whitin

Builds First Domestic Warp-Knitting Machine

Incorporates Electric System Furnished by General Electric

THE first machine of its kind to be designed and built in the United States, this Whitin high-speed, warp-knitting machine incorporates many new features never before offered the knitting trade. For instance, an even quality (stitch) is automatically maintained with only one setting, (despite changes in diameter of warp beam) throughout the entire length of the cloth. *Naturally this saves resetting the machine after every fifty or sixty yards and means a tremendous reduction in waste and seconds.*

The first such machine built in the United States, this Whitin high-speed, warp-knitting machine will knit full-width fabric 168 inches wide. Cloth beam capacity is 12 inches in diameter.

Electrically Speaking

This new warp-knitting machine incorporates a compact and flexible electrical system. Convenient dimensions of the individual motor drive allows mounting the motor inside the frame of the machine where it is out of the way—yet accessible. The speed regulator (which has adequate range for any desired knitting speed) and the starter are grouped (see arrows). Positive and convenient control at any point along the front of the machine is made safe and easy by the shipper rod switch.

General Electric Co.
Schenectady, N. Y.

GENERAL ELECTRIC

661-2

Full-Fashioned Quotations Reduced Sharply

Late in March Julius Kayser & Co. reduced full-fashioned hosiery prices to new bases of $5.40 a dozen for lisle top numbers and $6.00 a dozen for all-silk goods, guaranteeing the line at the same time against further reductions until June 30. This company at that time reduced the $6.25 silk styles recently introduced to $6.00 while several formerly at $8.25 were cut to $7.25. The revisions on standard numbers brought down most of the $1.15 retailers to $1.00 a pair on April 1 and some of the $1.25 numbers to $1.15. The lisle tops will retail for 69 cents while the 85 cent and 89 cent retail brackets are eliminated altogether. Gotham Silk Hosiery Co. named prices that were also about in line with those of Kayser but there were other branded full-fashioned hose that reduced only to a $6.60 minimum on all silk.

After the naming of these new prices the raw silk market suffered a further decline but no additional changes were made in the branded full-fashioned lists and manufacturers called attention to the fact that the raw silk market was still about 50 cents a pound above a year ago when hosiery prices were approximately what they are in the revised list just issued. Some manufacturers of full-fashioned goods expressed the hope that by June 1 raw silk would slide back to $2.00 a pound, feeling that is the best place for it through the fall season and next year when nylon begins to come out in larger volume. Some manufacturers feel that nylon will practically monopolize the higher hosiery bracket at least and that silk goods therefore should be priced so attractively to the consumer that the current volume at prices from 59 cents to $1.00 a pair could be maintained. It is not believed branded prices would be touched again unless silk hits $2.00

FORECAST

(Opinion submitted by COTTON's market correspondent.)

Philadelphia, April 16, 1940

The business decline in the United States which has now been in existence for four months has about ended and for the last couple of weeks activity has not been further reduced. In addition, commodities have ended their long decline in a majority of instances and advances have occurred in several. A more confident buying attitude is also apparent but as inventories are fairly adequate in most industries there is little likelihood of another buying wave such as was seen last September and October when war first started.

In the domestic picture, the leveling off of business has been the important thing indicating that even without the impetus of more active warfare in Europe the United States was about to have better business. In the international situation the intensification of fighting makes the outlook for continued demands for materials in the United States by nations that have the boats to get it and the money to pay for it. The third important factor on the bullish side is that political events seem to be in the direction of more conservatism instead of further to the left.

In the textile industry there have been five months of inactive buying in practically all branches of the trade so far as raw materials or yarn purchases have been concerned and to a great degree a lack of sustained demand for manufactured goods from jobbers and retailers. This means old orders have been well run out and buyers are now in a liquid position and able to place new business for the next few months if they feel sure no further price weakness is coming.

This feeling is being developed and in fact some lines have already seen price strengthening such as in cotton and wool. Silk after hitting around $2.50 has also snapped back to a higher level. The situation in Scandinavia has also caused a situation by removing some supplies of pulp for rayon manufacturing that may later this year raise costs for such yarn producers and cause rayon to advance. The war if more active will strengthen wool over the world.

Notwithstanding the better outlook there is nothing to indicate another surge in new commitments like we had last September. Inventories now are larger and buyers are not as excited as they were then so that the outlook is for conservative hardening of prices and the booking of new orders at a more active pace than seen for four to five months. In the knitting trades the outlook is for better business among underwear manufacturers especially due to lack of much new business in recent months.

In hosiery the situation in full-fashioned is expected to work itself out shortly. This market has been unfavorably affected by wide swings in silk and also by the coming of nylon stockings but in a few weeks lower hosiery prices and the retail offering of nylon will tend to dissipate much of the uncertainty.

Apex Plea For Damages Before Supreme Court

Counsel for the Apex Hosiery Co. of Philadelphia, argued April 1 before the Supreme Court of the United States that a labor union which engaged in a sit-down strike should be held liable for damages under the Sherman Anti-Trust Law of 1890. Sylvan H. Hirsh, attorney for the company, asserted that Congress had given a labor union immunity from the Sherman Act only so long as the means which it employs to attain its purposes are lawful or peaceful. He contended that the Philadelphia branch of the American Federation of Hosiery Workers had seized the Apex plant in 1937 and held it for seven weeks even though the union at the time had only eight members out of its 2500 employees. Hirsch said a conspiracy to restrain trade was proved to the satisfaction of a Federal Court jury but whose verdict was overturned by the Circuit Court of Appeals.

He described the sit-down strike, which he said was declared by William Leader, president of the Philadelphia branch of the union and added that the sit-downers had "laid waste" the company's plant and office, resulting in a stoppage of the company's business. Isadore Katz, attorney for the American Federation of Hosiery Workers, contended that the Sherman Act by its very terms exempted all labor union activities from prosecution under anti-trust statutes. He said that view was in strict adherence to the intent of congress. Katz denied that activities of the union during the sit-down strike restrained commerce to an extent which would make them applicable under the Sherman Act. The labor union in its Supreme Court argument contended that labor organizations have complete immunity from anti-trust statutes since Congress directed those laws "at the evil of the trust and nothing else." Damages of 111,932 are involved.

Wage Minima Approved for Knitting Trades

Approval of the 33½ cent per hour minimum wage recommendation of the knitted underwear and commercial knitting committee and of the 35 cents per hour minimum wage recommendation of the knitted outerwear committee was made known by Colonel Phillip Fleming, Federal wage and hour administrator. Wage orders have been issued making the knitted underwear minimum effective May 6 and the knitted outerwear minimum effective July 1. At the same time the administrator said that he would hear all oral arguments April 23 in review of the determination and order regarding the employment of learners in the knitted goods industry. The knitted underwear and commercial knitting industry as defined for the committee is carried on in some 500 establishments located principally in New York, Pennsylvania, Tennessee, North Carolina, Massachusetts and Virginia.

The industry employs some 60,000 workers and it is estimated that some 17,000 of these were being paid less than 33½ cents per hour, the minimum rate to go in effect early next month. The industry produces about $150,000,000 worth of goods a year. The knitted outerwear industry employs an average of 23,000 workers and an undetermined number of industrial home workers. The latter are largely engaged in making infants knitted wear. It is estimated that some 7500 of the plant workers were being paid less than 35 cents an hour, the minimum rate which will go in effect July 1. The

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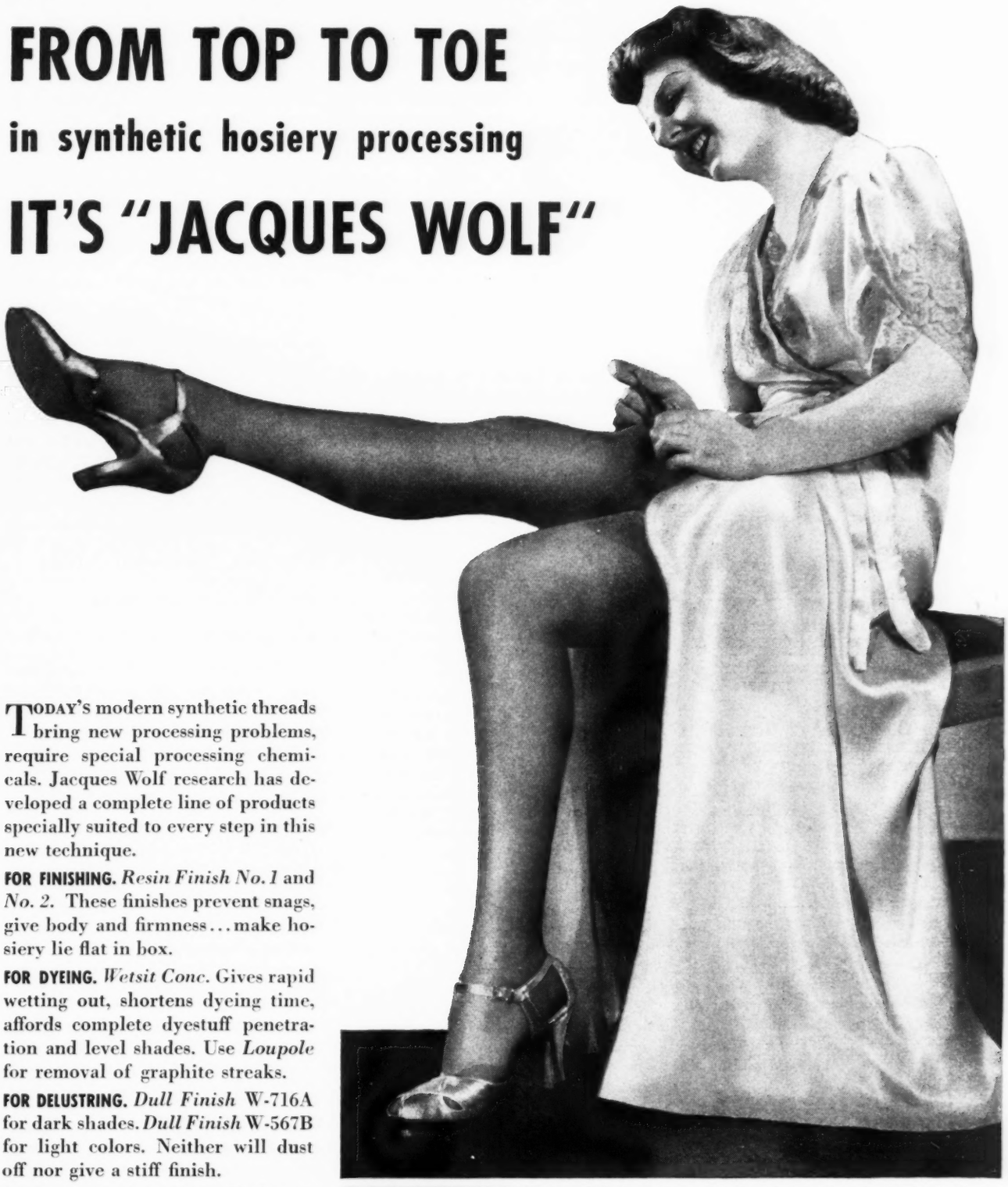

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placing in effect of this new wage base for the underwear industry has been causing some firmness in prices as named by the underwear manufacturers and at the same time there has been a larger interest displayed by many buyers. This was not apparent, however, to any noticeable degree in the outerwear section of the market.

Outerwear Group Re-Elects Whitman

Roger W. Whitman of the American Hosiery Co. was re-elected president of the National Knitted Outerwear Association at its annual meeting in New York City. A. I. Greenhill of Greenhill & Daniel was elected treasurer and Sidney S. Korzenik was re-elected secretary. Other officers were the original vice-presidents including A. H. Liebster of M. & M. Knitting Mills, Philadelphia, for that region; I. B. Davies of the Bradley Knitting Co. for the Midwest region; Ben Schanzer of Henry Schanzer & Sons for the Eastern region; Arthur W. Reinthal of Bamberger-Reinthal of Cleveland for that region and Edward W. Stewart of the Pacific Knitting Mills, Los Angeles for the Coast. The office of executive director long held by Harold R. Lhowe and for which he announced in a letter to the directors of the organization that he was not a candidate for another term, was eliminated by a new clause in the by-laws. President Whitman announced that the duties of this office which Mr. Lhowe filled for so many years would be in the hands of the president and board of directors together with the secretary and staff.

Officers reporting to the association called attention to the fact that the minimum wage set for the outerwear becomes effective July 1 of this year with the new minimum of 35 cents an hour. The question of learners, however, remains to be settled and it was stated that no blanket provision can be made for the employment of learners by all firms of the industry. Secretary Korzenik stated that unfortunately the industry was called upon to meet the higher costs under the Federal wage and hour law at a time when activity had been sharply decreased. The growing success of the organization's efforts against unjust returns was stressed.

Retailers Issue Data on Nylon

A message to the public about nylon, suggested for use in a counterslip to be distributed with nylon hosiery when the product is placed on sale in stores throughout the country on May 15, has been sent to all members of the National Retail Dry Goods Association. Drafted by a small committee of retailers and approved by representatives of the National Association of Hosiery Manufacturers the statement is designed to disabuse the customer of any false notions as to the indestructibility of nylon and at the same time supply simple instructions for its care in order to prolong its length of service. Most retailers are expected to furnish the consumer buying nylon stockings a slip containing this statement: "The wear you derive from nylon hosiery will depend largely upon the care with which you use it. Like all sheer stockings nylon may snag and run. Especial care is recommended in putting on and taking off.

"If due care is used in handling and washing you should receive satisfactory wear. 1. Be careful that fingernails or rough surfaces do not damage your hosiery. 2. In spite of the unusual strength of nylon there are strains to which no sheer hosiery should be subjected. 3. Do not press with hot iron or place on hot surface. 4. Nylon's low capacity to absorb water causes it to dry quickly and acts to prevent dirt being carried into the fabric. Hence washing may be very gentle because it is necessary only to wash dirt off instead of out. Retailers generally felt that it is necessary to counteract at once the popular notion that nylon will wear forever and that they should make it clear that nylon hosiery will last longer if it is treated with the same care as given silk but they asserted the stores should have no other adjustment policy than it has for silk hosiery. Retailers hope that the initial limited nylon volume will not curtail silk sales."

Retailers Studying Introduction of Nylon

The National Retail Dry Goods Association and the National Association of Hosiery Manufacturers have not agreed altogether on the question as to what should be contained in the statement to consumers regarding nylon hosiery. Lew Hahn, general manager of the NRDGA, in an article on hosiery merchandising referred to a recent news item that Du Pont's specified minimums on the various nylon hosiery construction at wholesale will permit of no discounts, rebates, advertising allowances. The manufacturers have pointed out that their contracts with Du Pont require net terms when the specified minimums are quoted, $8.25 on 45-gauge, $9.00 on 48-gauge, and $9.75 on 51-gauge, and therefore that restrictions on discounts are definitely not of their making. In commenting on this Mr. Hahn said, "How remarkable it is that the psychological relationship between the buyer and the seller should thus be completely reversed and the buyer should be so ardently pursuing the manufacturer for merchandise and that merchandise of a new and untried sort."

President Constantine of the National Association of Hosiery Manufacturers said, however, that some bulletins of retailers in this connection contained unfair and unwarranted statements. In commenting on the fear expressed that manufacturers of nylon stockings may offer them for sale under conditions of their own making instead of accepting the conditions of the buyers as has been true in most cases in the sale of other types of hosiery, asked what makes a market favor the seller or the buyer. He said when the amount available is less than the amount demanded by the market you have a seller's market and not much can be done about it. He indicated the situation in nylon would not change the relationship already existing in other types of hosiery.

Penna. Hosiery Mills in Modernization Program

An extensive plant improvement program involving the expenditure of $1,850,000 for modernization of machinery is now in progress in the hosiery manufacturing industry in southeastern Pennsylvania, according to a statement made by State Secretary of Commerce Richard P. Brown. The modernization program he said includes $1,500,000 for the purchase of new machines and approximately $350,000 to convert old knitting machines into higher speed, longer section units. In addition to installing new equipment various Pennsylvania hosiery mills have been building additions to their plants in the last ten months. Secretary Brown said this indicates that the Pennsylvania hosiery industry is expanding at home and that there had been a reversal of the southward trend of the hosiery industry.

He said in the past year no Pennsylvania mills shifted to the South. "The improved equipment enables Pennsylvania hosiery mills to continue to rank among the most modern and efficient in the United States. Differentials which have favored southern states are leveling off and continued modernization coupled with the ample supply of skilled hosiery workers here will keep Pennsylvania mills in a competitive position." The rehabilitation program began in Philadelphia about a year ago, since that time hosiery mills in and near the city have spent about $1,000,000 for new machines and $250,000 to improve older machines. In the

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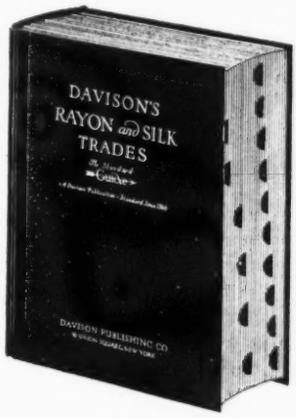

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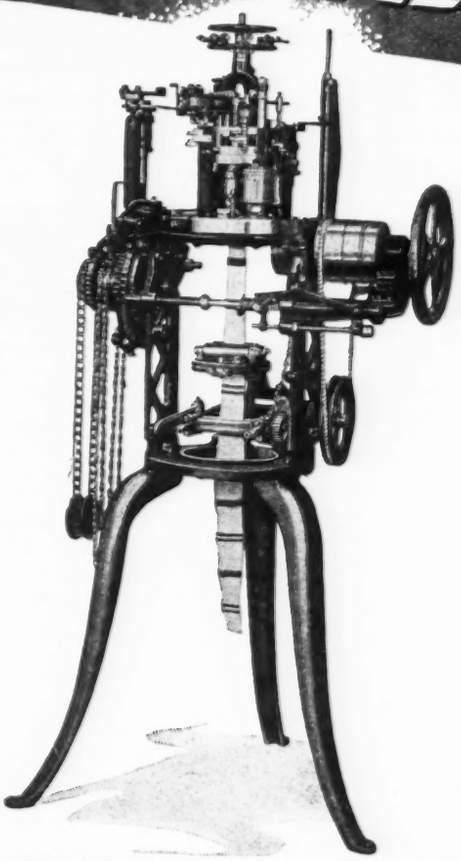

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Reading area mills are spending $500,000 for new machinery and $100,000 to revamp older machines in mills in that section. Activities in installing the latest equipment has also improved the finishing and boarding departments of mills especially in the Philadelphia district and virtually all of the machines now being installed can be used for the various types of new yarns such as nylon.

Home Knitters Get $10,000 Back Pay

In a settlement reached before Federal District Judge Harry A. Kalodner officials of four Philadelphia bathing suit and sweater manufacturing concerns agreed to pay 200 home workers more than $10,000, in back wages due them under the Wages and Hours Law. The employers also agreed with the demand of the International Ladies' Garment Workers Union to discontinue sending out work to be done in homes and give women who have been doing such work jobs in their factories. Under the settlement a permanent injunction was issued against the four firms so that in the event of any future violations of the Wages and Hour Law they would be in contempt of court as well. The settlement resulted from an investigation through the Philadelphia office of the Department of Labor, Wages and Hours Division. The companies involved, all located in Philadelphia, were Forrest Knitting Mills, Girard Knitting Mills, London Knitting Co., Inc., and Novelty Knitting Mills, Inc.

Seamless Hosiery Demand Better Than Full-Fashioned

Describing the full-fashioned end of the hosiery market in recent weeks as being in one of the worst conditions it has ever experienced, President Earl Constantine of the National Association of Hosiery Manufacturers, said that the seamless division is in relatively better condition. Among the factors that must be taken into account are the differences in commodities used, the seamless taking cotton and rayon and a lesser quantity of wool while the full-fashioned hosiery in recent years has been made almost exclusively from silk. In addition to this there has been a much more rapid expansion of capacity in the full-fashioned division than in the seamless. Cotton and rayon used in the seamless trade has been fairly steady in price during the last year. But in the silk market there have been wide fluctuations.

Pointing to the rapid rise in silk last year he said this caused much confusion and uncertainty. Following the sharp rise, the silk market this year has declined rapidly bringing in its wake many disturbing factors for the full-fashioned manufacturer. President Constantine further stated that while both the seamless and full-fashioned branches of the industry showed increased shipments in 1939 in the case of seamless the increase was far more substantial. Because seamless productive capacity has not been increasing substantially in recent years the recent increases in shipments have been beneficial to that branch of the industry. In contrast the increased shipments of full-fashioned goods have been less beneficial because they have been participated in to a growing degree by new installations which have entered the industry.

Government Aids in Cotton Hose Development

Under recent legislation designed to stimulate the use of cotton in women's hosiery, the Bureau of Home Economics of the Department of Agriculture, has designed and released to the trade fifty-six types of full-fashioned hosiery. Some of these are about to be placed on retail sale. The government designs range from plain knits for service to smart designs with mesh heels and toes and other style features for wear with dress shoes and sandals. Some have two-way stretch welts and all are carefully designed to insure trim fit and greater elasticity than the old style cotton stockings. Many of these new cotton full-fashioned numbers have gone through laboratory tests for abrasion, stretch, and tensile strength. Yarns for these hose were spun from American grown long-staple cotton and to give smoothness and luster were gassed and mercerized.

Though experimentally knit to the specifications of the Bureau of Home Economics all these designs were made on modern hosiery machines, the same kind used for manufacturing silk or rayon hosiery. One feature of the cotton hosiery project is a serviceability study of specially made plain knit white cotton hose for nurses. Full bleached cotton hose have advantages for nurses wear. It is reported in the sales spinning industry that the sale of such hosiery might be stimulated by the recent extension to cotton goods of the so-called stamp plan in the WPA. The cotton stamp plan, as is the case with the food stamp program, will provide for the movement of surplus cotton goods and will give eligible families new buying power in the form of special cotton order stamps. The new cotton full-fashioned hosiery will retail at 99 cents a pair in some instances but buyers under the cotton stamp plan could obtain them at a greatly lower cost.

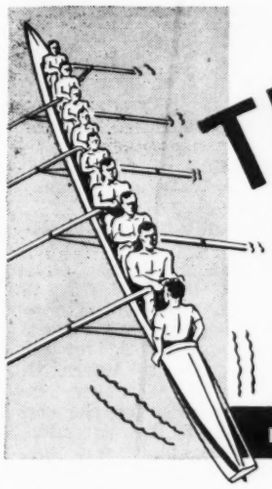
Phila. Hosiery Mill Reports To Employes on Earnings

The recently reorganized full-fashioned hosiery concern of Aberle, Inc., has completed its first year in business and the management has made an unusual report especially directed to its employes. It stated that sales during the first twelve months averaged 75 per cent of total capacity adding that there was a narrow margin of profit from which to draw for operating expenses during the coming year. Illustrating the extremely small margin of profit under which the mill operated it was stated that an increase of only 3 per cent in wages or a reduction of 1 per cent in wholesale price of the hosiery would wipe out all profit. Each dollar received from sales by this company was divided as follows: one-third of all money received was paid to employees in wages, which it was stated is a higher percentage than going to labor as an average in all the manufacturing industries.

The next largest expenditure was 33 cents of every dollar received from sales to buy silk. In commenting on this feature of the business the report says: "If we had the money and the ability to gauge the market it might be possible to buy our materials at the lowest price and thus increase our profits. But because we haven't sufficient capital and because no one in this world can accurately foresee what will happen in the silk market or to the rate of financial exchange we find that rising silk prices threaten to wipe out our small profit margin." It costs 17.55 cents out of every dollar received to pay for rent, power, heat, light, repairs; 7 cents was spent in selling costs; 3 cents went for running the office; 3 cents went for insurance; another 3 cents for taxes, leaving about 1 cent profit or about one-half cent per pair for the company.

Dayton's Greenville Office

The Dayton Rubber Manufacturing Company, Dayton, Ohio, has opened a southern district textile products sales office on the seventh floor of the Woodside Building, Greenville, S. C. The office is under management of J. O. Cole, sales head for the textile products division of the company.



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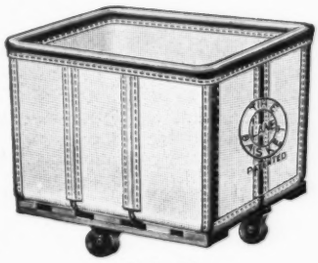

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TRENDS—YARN MARKETS

Signs That Greater Activity in Yarn Markets Here—Prices Easy Over Last Month But Indications Point to Nearby Hardening—Old Contracts Well Cleaned Up—New Fluctuations in Silk Worry Hosiery Trade

Philadelphia, April 16, 1940

ALTHOUGH COTTON and worsted yarns have continued their decline over the past month the drop has been less rapid and more resistance has developed leading the trade to look for stability shortly. In silk there has been a sharp drop recently, up to 50 cents compared with a month back but much of this has now been made up so that silk is showing more stability also with buyers now having in mind the effects of new war developments in Europe and how this will affect psychology. No one expects there will be another increase in inventories as took place right after the war started late last year but they do feel that freer buying of yarns than seen for five months is about due. This in itself would bring about a price steadying because some yarns especially cotton are now selling for cost or less and this cannot last after spinners book more business. Intensification of the war should also bring higher wool prices and more demand for worsted yarns.

Cotton Yarns

There has been no change in raw cotton over the last month but during this time further reductions have been made in cotton yarn prices, averaging one cent. During the last week or since the development of more active warfare in Europe a more confident feeling has been seen and in some instances spinners are asking more than they did a week back. There has been a more active demand but so far the largest contracts placed have been at or close to the lowest prices of this year. There has been only a small demand for cotton yarns for about five months or since the buying wave which began immediately after the outbreak of the war in Europe so that the time was almost here when new buying of cotton yarns had to come and the intensification of warfare created the spark that set the improvement in progress.

Notwithstanding this better feeling in the market and the need of many manufacturers for new supplies there is nothing to indicate that another period of active buying such as occurred last September is going to be seen again. The reason for this is that manufacturers do not believe commodities and yarns will stage advances of such a degree as to make large forward delivery contracts that essential. Manufacturers believe that their own business is about to become better and most feel that yarn prices are as low as they are going to go so that with these factors at work the change for the better is explainable. There has been, in the last week. the largest demand from the knitting trades since last December and business has been placed on the basis of 20 cents for 10s carded cones and 31½ to 32 cents basis 30s single combed peeler. These prices each represent one cent lower than a month ago and in the case of the carded yarns it is not quite two cents above the low of last year when raw cotton was two cents lower and spinners wage levels were considerably lower than at present.

At the beginning of April mercerizers reduced their prices two to four cents a pound, bringing 60s two-ply ungassed to 67 cents compared with 69 cents in the previous list that had become effective late in February and comparing with 74 cents in the price list that went into effect last December and which was the highest price touched by these counts in recent months. The sharp cuts in recent weeks in mercerized yarns considerably lowers the raw material costs for manufacturers of various types of seamless hosiery and in general permits them to contract ahead at the same prices or close thereto at which they placed their last heavy contracts several months ago. Although shipments of mercerized yarns have been smaller during the last month on old contracts the first quarter of 1940 continued to show an improvement over the same time a year previous. Continued activity in seamless hosiery and larger use of mercerized in underwear accounting for this.

Silk

There have been wide fluctuations in silk this month, the market dropping from around $3.00 a pound a month ago to approximately $2.50 early in April but in the last ten days there has been a firmer tone to the market which has snapped back to around $2.80. Hosiery manufacturers have not been in the market for large quantities because of these wide fluctuations and the belief of many that this commodity may drop to about $2.00 and also because most full-fashioned hosiery manufacturers are operating on a greatly curtailed basis with new business very quiet so that they are not in a very bullish frame of mind. Mill takings of raw silk in the United States during March totaled 21,685 bales or about 2000 bales under general trade expectations. Consumption in February amounted to 22,485 bales and in March 1939 totaled 37,863 bales. The arrivals of raw silk into the United States during March continued light totaling only 17,266 bales while the arrivals in February totaled 13,566 bales.

These figures indicating a disappointing consumption of raw silk by American mills last month also place emphasis on the extent of the drop in silk consumption in this country during the current raw silk year. The accumulative nine months total for the period of July 1, 1939, to March 31, 1940, amounted to 265,000 bales compared with 334,000 bales for the corresponding period of the preceding crop year, Estimates place mill takings for the final quarter of the current season at between 60,000 and 65,000 bales. Therefore for the whole 1939-40 silk year American mill takings would reach a total of only 330,000 bales compared with 414,481 bales last last year or a drop of 20 per cent.

Rayon Yarns

Shipments of rayon yarns during March were 10 to 15 per cent smaller than during February although there was no decline in cuprammonium yarn shipments, manufacturers taking in the entire month's production made by this process. End of the month stocks in producers hands showed moderate increases in the knitting yarn field. Plain tubing is in small demand but there is, however, a lively demand for tricot cloth and for novelty underwear tubing. Sellers of knitting yarns also report that they find lower prices for raw silk have caused some manufacturers of hosiery, which had gone over to rayon use when high silk prices were current, are now swinging back to use of the natural silk. The market was surprised with the showing made in rayon yarn deliveries over the first quarter notwithstanding the tapering off in shipments in recent weeks. First quarter shipments this year were about 14 per cent higher than those for the corresponding period a year ago. Stocks of yarn at the end of March were almost two million pounds larger than at the end of February.

Worsted Yarns

There has been no important change in worsted yarn prices this month but during the last week, or since more active warfare developed abroad, prices have not only hardened but a much more active demand has been apparent. There has been a fair volume of business placed in the last week for the fall lines of knit goods and indications are a greater percentage of worsted and somewhat less of the cheapener types will be used than was the case during the spring season when wool prices were higher. Manufacturers of wool half-hose have been placing fair sized contracts in single French spun worsted and in both woolen spun and cotton spun merino yarns. It is estimated that the half-hose trade has now placed more than half its business for next winter's lines. Spinners quote 2-20s, 50s Bradford at $1.10 to $1.15 which is approximately the same as they did a month ago.

Style trends for the fall call for considerable use of rabbit hair, blended with rayon or with rayon and wool. From all indications a number of southern mills will have a good share of this business, spinning and weaving the goods on the cotton system.

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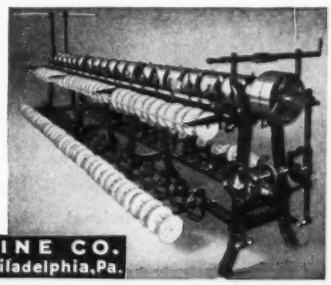

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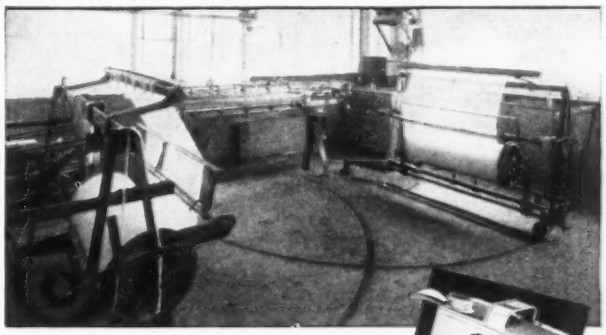

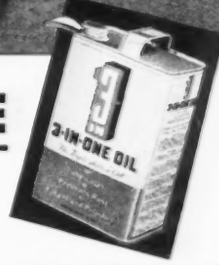

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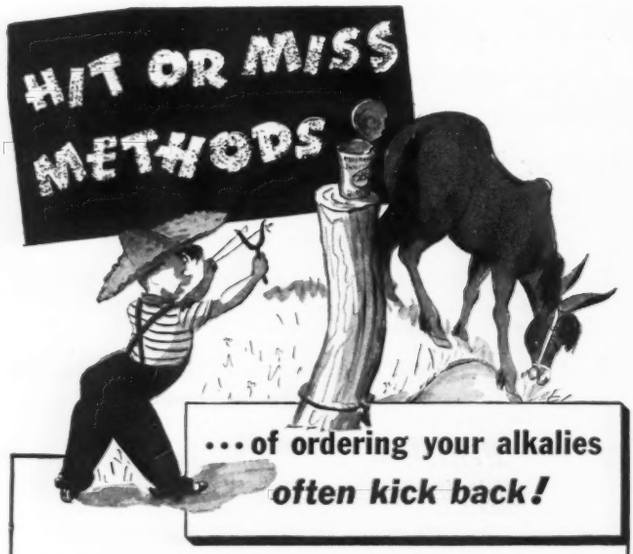

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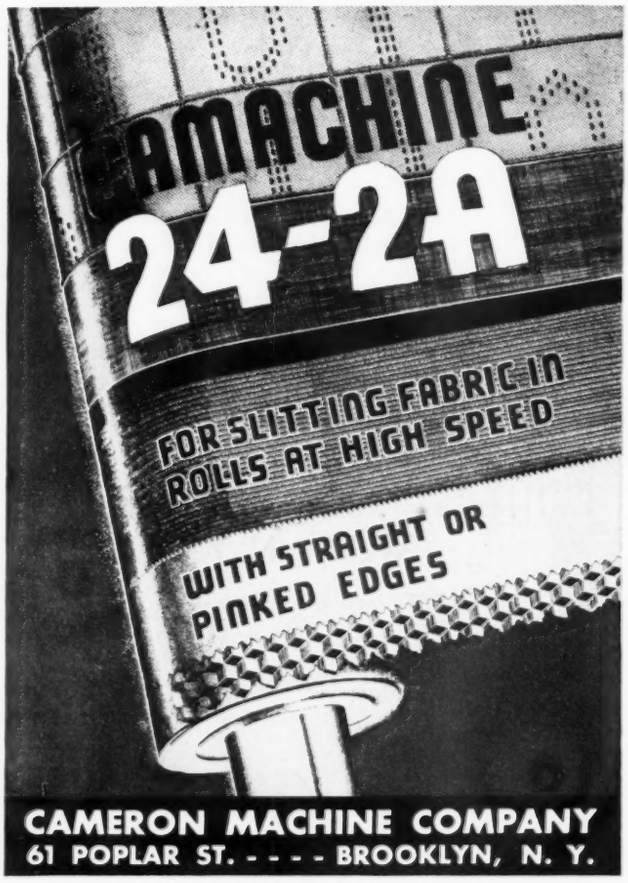

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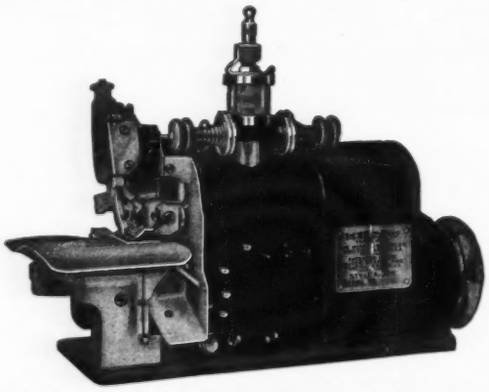

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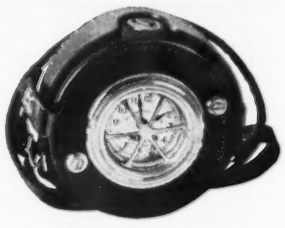
WATCHMEN'S CLOCKS



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"The Roving Frame"

by Fay H. Martin

Every carder, frame fixer, section man, and superintendent will find "The Roving Frame," by Fay H. Martin, an instructive pamphlet. Mr. Martin, who has long written articles for "Cotton", clearly interprets draft, twist, lay, tension, pressure of the presser, hyperbola curve, the winding of the bobbin, reverse twist on the roving frame, roving frame cones, tensions and compounds so that the student or practical man will profit by his explanations. This is a reprint of 26 pages 8½ x 11 of a series of articles which were previously published in "Cotton," containing valuable information, illustrations, tables, charts and diagrams.

Fay H. Martin is a recognized authority on the roving frame. This book has been adopted by textile schools and vocational schools. Price per copy $1.00 (or it may be secured in conjunction with a 3-year subscription to "Cotton" for $2.50 (Canada $4.00—Foreign $5.50).

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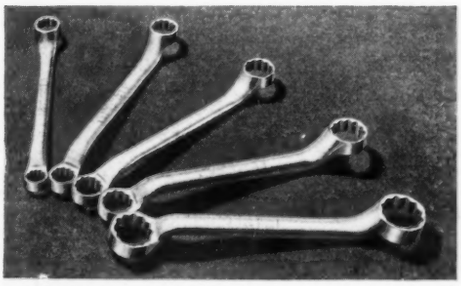

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The thin-walled Boxocket head slips in most anywhere . . . the offset handle works over obstructions. The all-round grip on the nut multiplies turning power—gives you safe, non-slip leverage with only 30° handle movement. Snap-on Dwarf Boxockets are made in 12 nut sizes—2 sizes per handle—covering a range 3/8" to 13/16".

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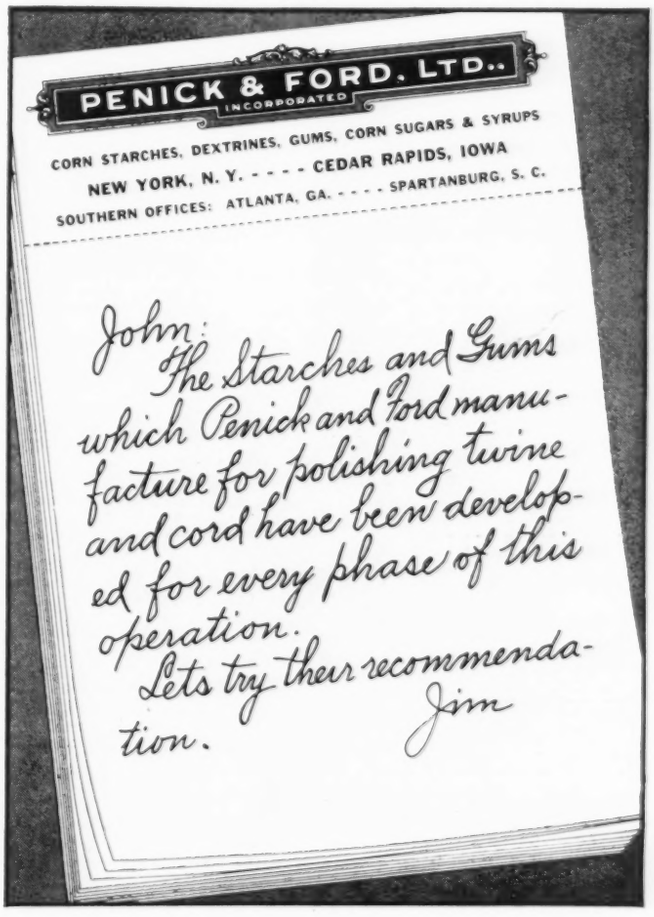
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TINTINOL *is Ready for Use in Any Color*

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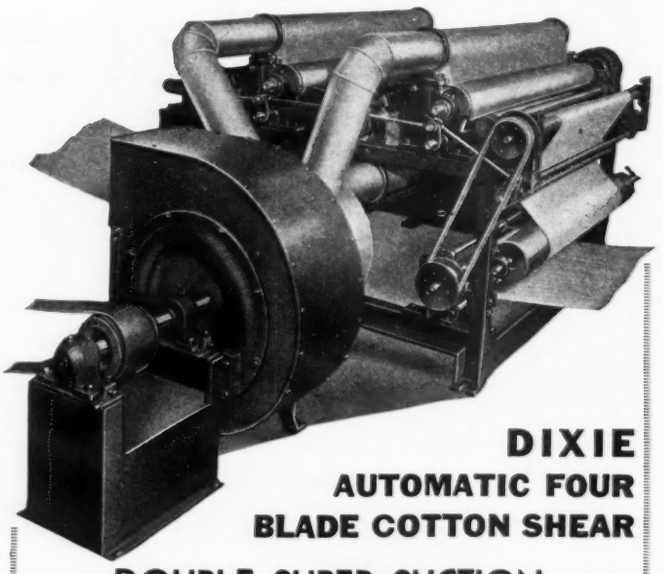

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DOUBLE SUPER SUCTION
DRAWS EVERY HANGING THREAD INTO THE BLADES IN FRONT AND CARRIES THEM AWAY IN BACK

SETS A HIGHER MARK FOR CLOTH CLEARING AND YARDS PER MINUTE

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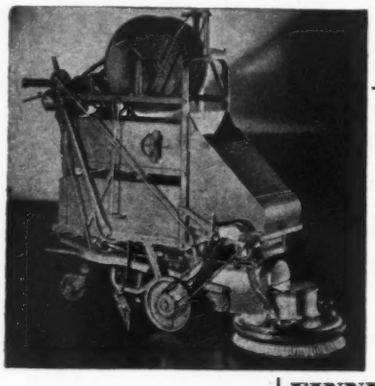

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2" to 72" Dia.

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Shut Off Expense Caused by Slippage You Save Money on Every Installation

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Dia.	Face	Price	Dia.	Face	Price
2 "	x 2½"	— $1.25	4 "	x 4½"	— $3.20
2½"	x 2½"	— 1.45	4½"	x 4 "	— 3.35
2½"	x 3½"	— 1.65	4½"	x 5½"	— 3.95
3 "	x 3½"	— 2.25	6 "	x 5 "	— 4.75

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— assure the handling of the heaviest loads. They soon pay for themselves by saving floors, equipment, time and energy.

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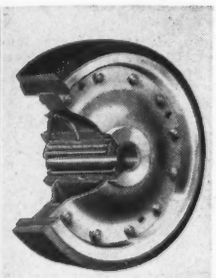

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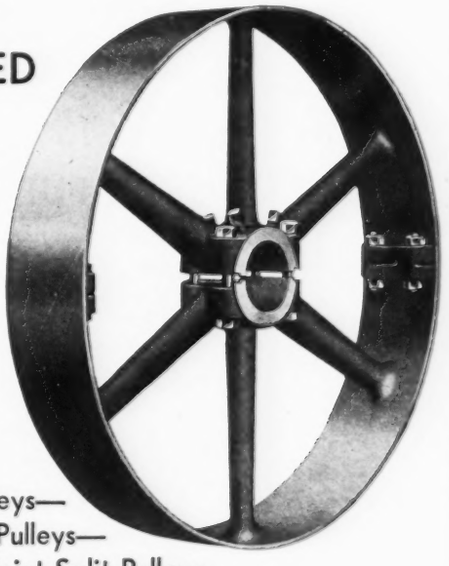

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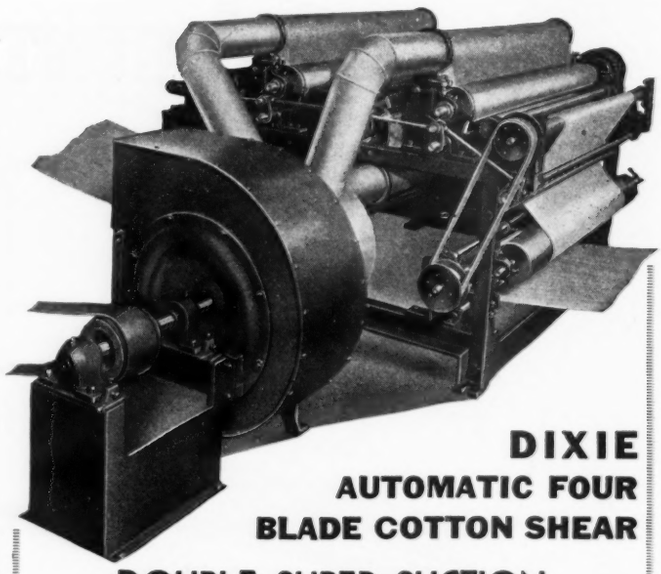

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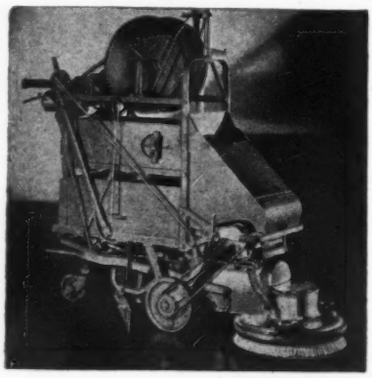

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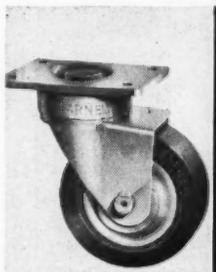

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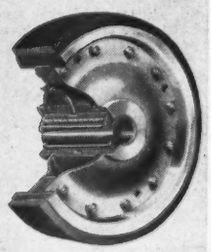

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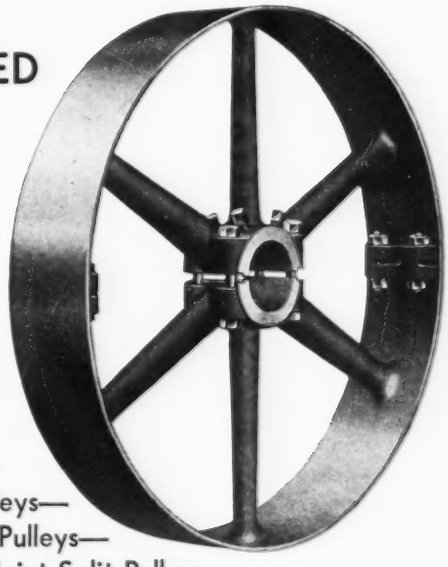

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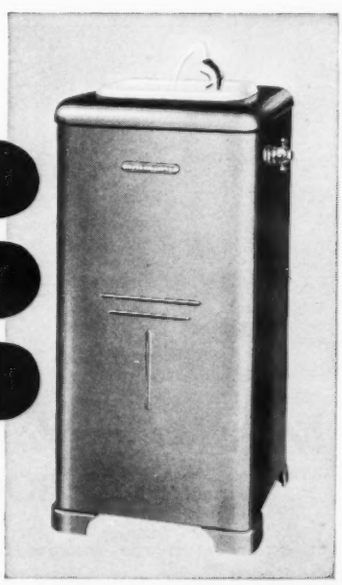

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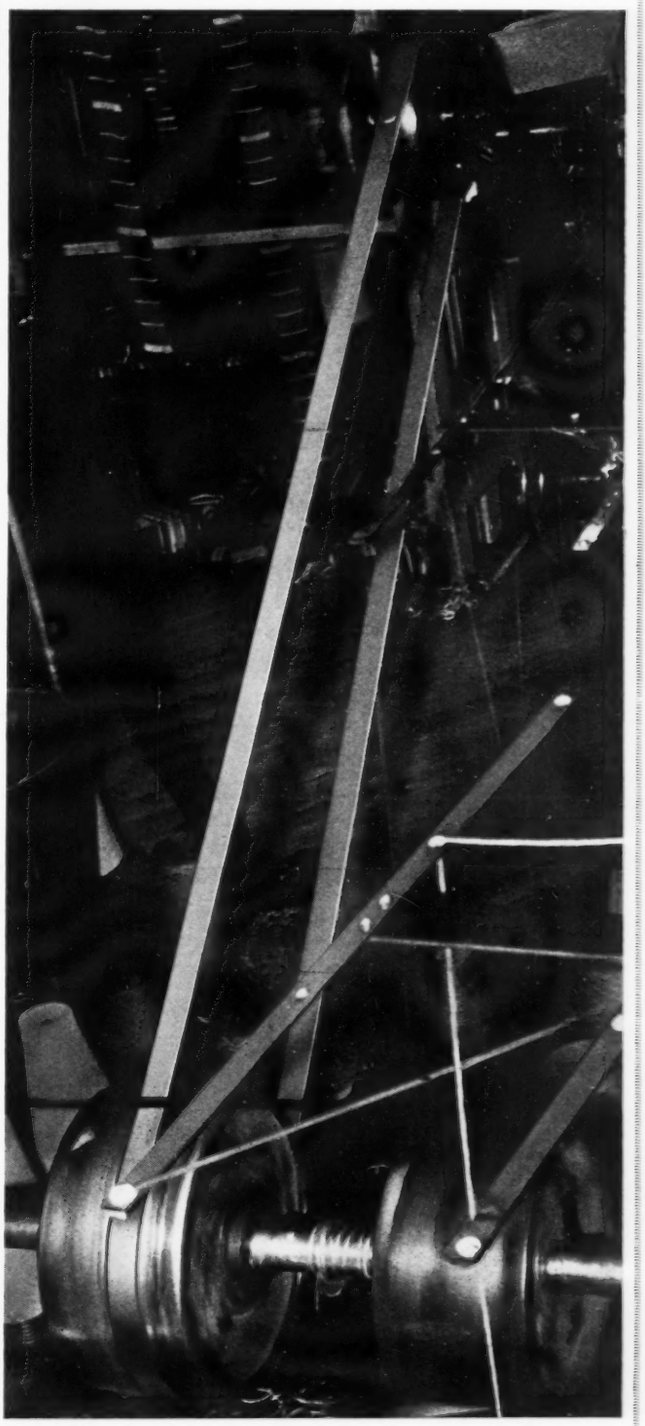

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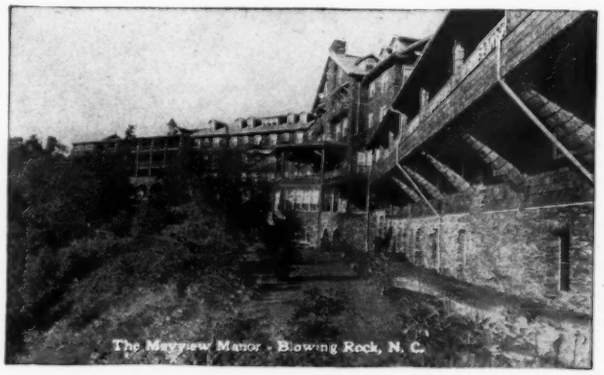

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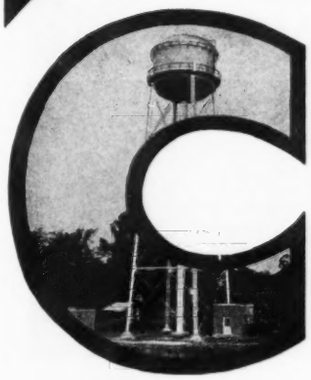
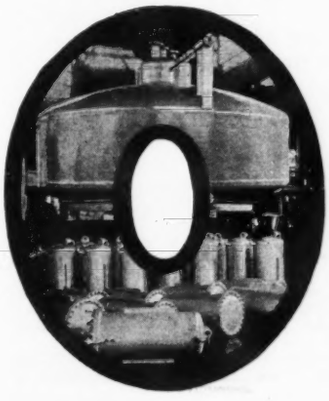
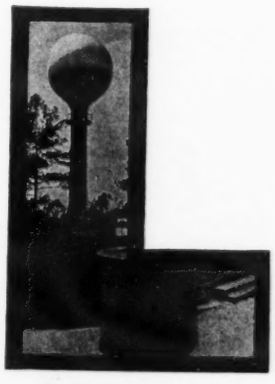


We Tank you!

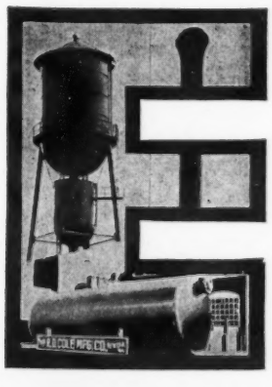


When you think of tanks, think of Cole — "Tank Builders for Over 80 Years!" For more than three-quarters of a century we have been building tanks: Water tanks, acid tanks, dye tanks, chemical tanks, oil tanks, creosote tanks, etc., of steel and alloy, supported by towers of fabricated steel frames. If it's tanks, we can build any kind, of any size, for you anywhere.



Other Cole Products

In addition to tanks and towers we manufacture stand pipes, vats, kettles, kiers, engines, boilers, air receivers, heavy pressure vessels, storage bins, and other fabricated products. Designs furnished by us for your individual requirements, or we can produce anything special from your own designs.



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COMPANY
NEWNAN, GEORGIA

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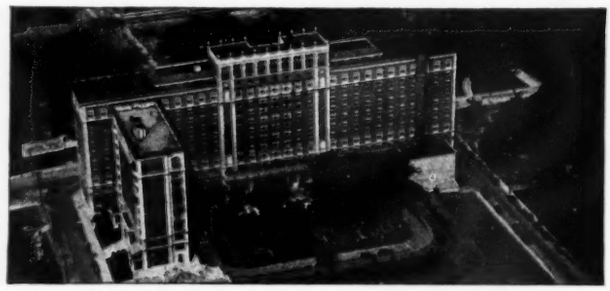

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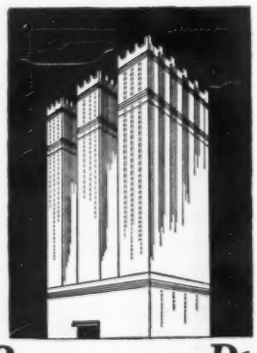

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WANTED

Superintendent for Southern mill requiring manufacturing experience on all types of cotton twines. In replying give age, experience and reference. Address Box 494, care COTTON, Grant Building, Atlanta, Ga.

Paul B. Eaton

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Former Member Examining Corps
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are not satisfactory. Full-fashioned superintendent will go to new location. Presently employed, and will stand on record made over period of 25 years in full-fashioned work. 39 years old; superintendent since 1927. Also understand work of manager. Have had experience on lace work, finishing, training of help, and running of nylon. Prefer Reading machines. Address Box 495, care COTTON, Grant Bldg., Atlanta, Ga.

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Your Advertisement on This Page

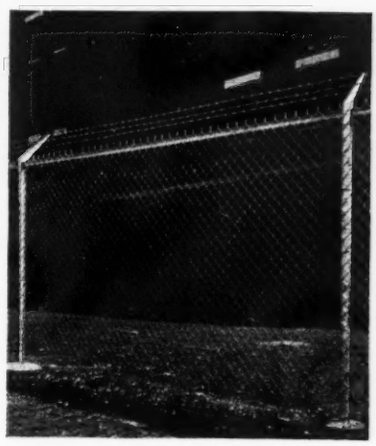
will produce results at small cost. Do you desire a position? Do you desire a good man to fill a vacancy in your mill? Do you desire your business or professional card placed before the textile industries?

Why not try an advertisement on this page of COTTON? Its 12,600 copies per month reach the textile executives, superintendents and heads of departments throughout the industry.

Note the rates above and send in your advertisement today.

COTTON, Grant Bldg., ATLANTA, GA.

THE ULTIMATE IN INDUSTRIAL *Property Protection*



● Stewart Non-Climbable Chain Link Wire Fences are protecting hundreds of mills throughout the country. *All Beam* construction, admittedly superior to other types of fence structure, is but one of the outstanding, exclusive superiorities of Stewart Chain Link Wire Fence. Let us tell you more about the advantages of Stewart Fences —why they are better and why they assure greater protection against trespass, vandalism and sabotage over a longer period of time. Don't invite trouble . . . Fence Now!

Catalog showing typical installations and complete details furnished on request. Sales and erection offices in all principal cities.

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The STEWART IRON WORKS CO., Inc.
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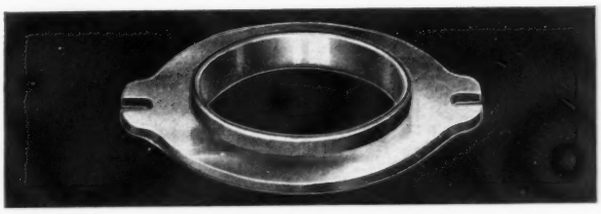
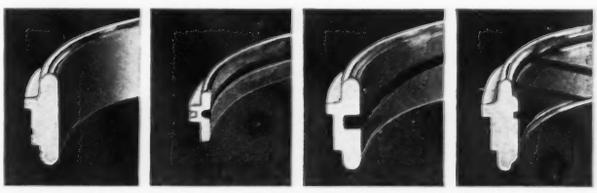
CINCINNATI, OHIO



Band ring in brass holder for wet twisting

Twister Rings — all types

While our name is "Whitinsville Spinning Ring Co.," we make twister rings also, including all standard types, and also several patented rings obtainable in the U. S. A. only from us. Thus DIAMOND FINISH ring service is the only one offering ALL rings!



Plain Vertical Twister Ring | Eadie Laced Lubricated Ring | 43/64" and 1" Eadie Ring | Eadie Multiple-Groove Ring

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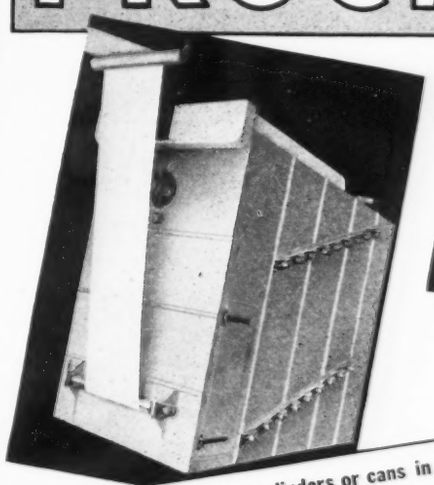

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- Has individually motor-driven rolls that adjust automatically to the speed the fabric is fed.
- Rapidity of drying means only short exposure of the fabric to the drying medium.
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- In addition, there is no narrowing or wrinkling of the fabric and important savings are realized.

PROCTOR & SCHWARTZ, INC., PHILA.

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A Complete Line of Industrial Petroleum Products

THE PURE OIL COMPANY, U.S.A. — PURE

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for

Stronger Yarn
Lower Cost
Greater Uniformity

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Addressing

AN 8 LETTER WORD

to

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➡ VELV-O-RAY accomplishes both the absorbency and flexibility of the treated fabric which is so vitally essential to *correct* and *uniform* shrinkage.

★ *VELV-O-RAY . . an All-Purpose Oil has developed noteworthy effects in softening and finishing the widest range of fibres and their varied mixtures.*

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. . for surprising Results!

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Brings these supreme advantages:

NON-GUMMING on the shoes

NON-FOAMING

NO RANCIDITY

LONGER BLANKET LIFE

A definitely improved quality of the fabric!

ROYCE

CHEMICAL COMPANY

Chemical Manufacturers

CARLTON HILL NEW JERSEY

VELV-O-RAY